

**Investigation of the Socio-economic Impacts of Morbidity and
Mortality on Coping Strategies among Community Garden Clubs in
Maphephetheni, KwaZulu-Natal**

SAMUEL MPELEKA CHINGONDOLE

November, 2007

Submitted in fulfilment of the degree of Doctor of Philosophy (PhD),

African Centre for Food Security,

School of Agricultural Sciences and Agribusiness,

Faculty of Science and Agriculture,

University of KwaZulu-Natal,

Pietermaritzburg.

ABSTRACT

The impact of morbidity and mortality on women's coping strategies has not been explored or documented in South Africa. Therefore, the main objective of this study was to investigate the influence of morbidity and mortality on coping strategies among 10 community vegetable garden clubs representing 79 households in the Maphephetheni uplands, rural KwaZulu-Natal.

An innovative mix of qualitative and quantitative methodologies was used to determine the impacts of morbidity and mortality on women's coping strategies. Qualitative research methodologies included group sustainable livelihoods analyses. Quantitative methodologies included three annual household surveys conducted between 2003 and 2005. The coping strategy index was also used to determine the levels of food insecurity and understand how morbidity and mortality compromised the coping ability of participating households. The coping strategy index has not been previously used in assessing the impact of morbidity and mortality on coping strategies. Chi-Square tests, Pearson correlation, paired-sample t-tests, and frequency and descriptive statistics were applied to analyse data.

The study found that the key contribution of women in community gardening and non-farm activities was compromised by the burden of morbidity and mortality that had negative effects on women's coping strategies. Findings indicated that the frequency of illness among garden club and household members increased between 2003 (21.2% of household members) and 2004 (25%). Similarly, more households (42% of the sample households) experienced a death in 2004 compared to 7.6 percent of households in 2003. As a result, costs associated with health care and funerals were significantly ($P = 0.01$) lower in 2003 than in 2004.

Most garden club and household members relied on subsidised medication to treat illness. Number of households dependent on subsidised medication dropped from 86 percent of households in 2003 to 66.7 percent in 2004. In 2004, households reported purchasing medication in addition to subsidised medication. Caring for the sick and contributions to household chores were significantly ($P = 0.01$) correlated in 2003 and 2004. This means that increased caring for sick members resulted in increased workloads for women. Caring for the sick and engagement in

community garden activities were significantly ($P = 0.01$) correlated in both 2003 and 2004, suggesting that caring for the sick reduced participation in community gardens. Analysis showed that reduced labour supply due to increased incidences of sickness and deaths, increased health care and funeral costs, reduced household income and increased care-giving minimised women's ability to cope with adverse situations. Women used erosive coping strategies such as borrowing money, selling assets, limiting portion sizes at meal times and relying on less preferred and less expensive foods to cushion the effects of morbidity and mortality. Application of erosive coping strategies minimises household resilience to future shocks and stresses.

Findings showed that farm and non-farm livelihood activities were critical components of rural livelihoods in Maphephetheni because sample households depended on community gardens, home gardens and small-scale non-farm enterprises for food and income to cushion the negative effects of morbidity and mortality. Community gardening contributed less to total monthly household income (4% of total monthly household income) than wages (41%), social grants (40.9%), home gardens (7%), small-scale enterprises (4.2%) and remittances (2.9%). Even though low, the contribution of community gardens to food security cannot be ignored considering the number of households (about 32% of sample households) that depended upon subsistence agriculture for food. Further analysis indicated that community gardens were themselves a coping strategy in the face of morbidity and mortality. Community gardens provided a risk aversion strategy and minimised risk by providing food resources and social and moral support for households facing hardship.

Strategies to enhance household asset bases and promote more productive farm and non-farm activities are needed to improve resilience against the effects of morbidity and mortality. Government and non-governmental organisations need to establish a multi-purpose centre where women can learn agricultural and entrepreneurial skills to help households cope more effectively with shocks and stresses. However, such strategies should ensure that tasks allocated to various activities such as community gardening, non-farm activities and household chores such as fuel and water collection should be distributed equally across household members so that women do not carry excessive workloads since increased workloads reduce women's ability to respond to livelihood insecurity shocks and stresses.

DECLARATION

This study presents original work by the author and has not otherwise been submitted in any form for any degree or diploma to any University. Where use has been made of the work of others, it is duly acknowledged in the text.

Samuel Mpeleka Chingondole

Date

Prof. Sheryl L Hendriks
(Supervisor)

Date

Prof. J Maryann Green
(Co-supervisor)

Date

DEDICATION

This thesis is dedicated to the food insecure of the world.

Timthokoze bwanji Chauta pa Zabwino zonse amatichitira!

“How shall we thank the Lord for the many good deeds He does for us?”
(Roman Missal, 1995)

ACKNOWLEDGEMENTS

The following people are thanked for their contributions to this study:

Thesis supervisor and mentor, Professor Sheryl L Hendriks, for her guidance, support, much encouragement, diligent attention to detail, and financial assistance towards field research.

Co-supervisor, Professor J Maryann Green, for providing advice, funds for research and tuition fees, and much encouragement throughout the study.

Mr. Michael Underwood, Coordinator for Forestry Department of the University of KwaZulu-Natal, for sharing literature resources and his moral support.

The 79 community garden club participants for their valuable time, input and help.

Mrs S. Mngomezulu for coordinating meetings with the community garden groups.

Chief T F Gwala of Maphephetheni for allowing the research to be conducted in his area of jurisdiction.

Mr. E B Gwala, *Induna* and community gardens Chairperson, for coordinating and facilitating meetings with the Chief during the different stages of field research.

Ms. Gugu Sibiya, Ms. N Mthembu, Ms Nonkululeko Mthembu, Mr. Sibahle Gcwensa and Mr. Moleka Mosisi for assisting with data collection.

Shannon Moffett of Urban-Eco Development Economists for data capturing.

Mjabuliseni Ngidi for interpreting in a presentation of the study findings to the ten community garden clubs, the chief and local councillors of Maphephetheni.

Bongikile Bhengu for translating the findings into Zulu for the community depository and use.

Ms. Quraishia Abdullah for proofreading this thesis.

The National Research Foundation (PhD scholarship obtained through Prof. J M Green); National Research Foundation Thuthuka (project funding obtained through Prof. S L Hendriks GUN TTK 2006060100012), and the Pietermaritzburg Agency for Christian Social Awareness (PACSA) for financial assistance towards my study.

To my wife Christine for providing love, untiring emotional and moral support, much encouragement and for strengthening my faith in God during trying times.

To my daughters Gertrude and Thembisile, only sister Martha, young brother Vincent, work colleagues at PACSA for their love and moral support.

To my friends, particularly, Rev. Dr. Stan Muyebe for providing encouragement, advice and moral support.

Last, but not least, acknowledgment is gratefully made to my mother (Chrissie) and late father (Paul) for their love for me and faith in God.

TABLE OF CONTENTS

ABSTRACT	ii
DECLARATION	iv
DEDICATION	v
ACKNOWLEDGEMENTS	vi
TABLE OF CONTENTS	viii
LIST OF FIGURES	xiv
LIST OF TABLES	xvi
LIST OF ACRONYMS AND ABBREVIATIONS	xix
CHAPTER 1: THE PROBLEM AND ITS SETTING	1
1.1 Motivation, relevance and importance of the study	1
1.2 Statement of the research problem	3
1.3 Sub-problems	3
1.4 Study limitations	4
1.5 Study assumptions	5
1.6 Thesis structure and organisation	6
CHAPTER 2: REVIEW OF RELATED LITERATURE	7
2.1 Why HIV/AIDS is a shock and stress for rural households: an overview of the unique nature and effects of HIV/AIDS	7
2.2 The extent of HIV/AIDS at global, regional, national and provincial levels	9
2.3 Morbidity and mortality, women and food security in southern Africa	12
2.4 National food security and household food security	13
2.5 Food security situation in southern and South Africa	17
2.6 Two key farm production parameters that impact on household food security	19
2.7 The critical role of the farm and the farm household systems: implications for food	
	viii

and livelihood security	20
2.7.1 Role of farm systems	20
2.7.2 The role of farm-household systems	21
2.7.3 Role of community gardens (a form or activity of subsistence agriculture) in rural livelihoods	22
2.8 Specific impacts of morbidity and mortality on small-scale agricultural production, food and livelihood security	24
2.9 Roles of funeral savings clubs in rural South African households	26
2.10 Gendered analysis of HIV/AIDS, roles and significance of women in community gardening	28
2.11 Impact of morbidity and mortality on household coping strategies in subsistence agriculture-based livelihoods	30
2.11.1 What are coping strategies?	30
2.11.2 Categories, types and implications of livelihood coping strategies	35
2.11.3 Sequence of application of coping strategies	38
2.11.4 Impact of morbidity and mortality on coping strategies	39
2.12 Sustainable livelihoods as an analytical framework	42
2.13 Summary	50
CHAPTER 3: CHARACTERISTICS OF THE STUDY AREA	52
3.1 An overview of South Africa	52
3.2 A brief description of KwaZulu-Natal	52
3.3 Description of the study area: an overview of Maphephetheni	53
3.4 Descriptive statistics	55
3.4.1 Garden club members	56
3.4.2 Household members	59
CHAPTER 4: STUDY METHODOLOGY	62
4.1 Sample selection	64

4.2	Garden club sustainable livelihoods analyses	65
4.3	Household surveys	69
4.3.1	Household survey one	70
4.3.2	Household survey two and the coping strategies index (CSI) methodology	71
4.3.3	Household survey three	74
4.4	Data analysis	75
4.5	Chapter summary	75

CHAPTER 5: CONTRIBUTION OF SUBSISTENCE AGRICULTURE TO RURAL LIVELIHOODS

77

5.1	Constraints of community gardening in the Maphephetheni uplands	77
5.1.1	Natural capital	78
5.1.2	Human capital: under-development of non-farm economy	80
5.1.3	Financial and physical capital (infrastructure)	82
5.1.4	Social capital	82
5.2	What is the extent of the contribution of subsistence agriculture to rural livelihoods in the Maphephetheni uplands?	83
5.2.1	The contribution of subsistence agriculture-based livelihoods to household income in the Maphephetheni uplands	83
5.2.2	Subsistence agriculture as a key basis for livelihood strategies (source of food) for the rural poor and a coping strategy	87
5.3	Chapter summary	92

CHAPTER 6: ROLES AND SIGNIFICANCE OF WOMEN IN SUBSISTENCE AGRICULTURE AND RURAL LIVELIHOODS

95

6.1	The role of women in livelihood strategies and asset bases	95
6.1.1	Farm-related livelihood activities of garden club and household members in Maphephetheni	96
6.1.2	The role of women in non-farm livelihood enterprises	97

6.2	Chapter summary	100
CHAPTER 7: CHANGES AND TRENDS IN MORBIDITY AND MORTALITY		102
7.1	Health outcomes	102
7.1.1	The extent of morbidity and mortality in the Maphephetheni uplands: changes and trends	102
7.1.2	Burden of morbidity and mortality	108
7.2	Chapter summary	110
CHAPTER 8: IMPACTS OF MORBIDITY AND MORTALITY ON SUBSISTENCE AGRICULTURE, SUSTAINABLE LIVELIHOODS AND COPING STRATEGIES		111
8.1	Impact on household labour and livelihood supply	111
8.2	Impacts of poor health and mortality on household income	112
8.3	Accessibility to South African government grants	116
8.4	Health care and savings	120
8.5	Household financial and consumption strategies and asset base	120
8.5.1	Household financial coping strategies	121
8.5.1.1	Borrowing	122
8.5.1.2	Use of own cash savings	122
8.5.1.3	Sale of livestock or other assets	123
8.5.1.4	Migration	124
8.5.2	Household consumption coping strategies	125
8.6	Direct and indirect cost of morbidity and mortality	129
8.7	The linkages between assets and morbidity and mortality	131
8.8	Chapter summary	132

CHAPTER 9: CONCLUSIONS AND RECOMMENDATIONS 134

9.1	Summary of the findings	134
9.1.1	The role of community gardens in the Maphephetheni uplands	134
9.1.2	Roles and significance of women in livelihood activities	135
9.1.3	Changes and trends in morbidity and mortality	135
9.1.4	Impacts of morbidity and mortality on women's coping strategies	136
9.2	Conclusions	138
9.3	Recommendations	139
9.3.1	Community gardens and non-farm livelihood activities	139
9.3.2	Improvement in access to government grants as social protection	141
9.3.3	Addressing the effects of morbidity and mortality	141
9.4	Summary of further research opportunities	142

REFERENCES 144

APPENDICES

APPENDIX A:	Sample of the interview schedule, round one of three, 2003
APPENDIX B:	Sustainable livelihoods analysis framework posters (used in 2003 & 2004)
APPENDIX C:	Seasonality chart, 2003
APPENDIX D:	Interview schedule for round two of three, 2004
APPENDIX E:	Coping strategies index methodology form, 2004
APPENDIX F:	Interview schedule for round three of three, 2005
APPENDIX G:	A summary of study findings presented to the study sample, the chief and local counsellors
APPENDIX H:	Study findings translated into Zulu for use by the study sample and the chief of Maphephetheni for community development initiatives as an advocacy tool

APPENDIX I: Survey coded responses, 2005

APPENDIX J: Sustainable livelihoods analyses pictures for the other nine community gardens in the Maphephetheni Uplands, 2003 & 2004

APPENDIX K: Some of the SPSS Data outputs

LIST OF FIGURES

Figure 2.1	A farm household system (FAO, 1995: 8)	22
Figure 2.2	Coping strategies to address the impact of morbidity and mortality (SAfAIDS cited by White and Robinson, 2000: 16)	37
Figure 2.3	The burden of the socio-economic impact of morbidity and mortality on rural women (FAO & Sustainable Development of Rural Ecosystems, 2002:23)	40
Figure 2.4	Components and flows in a livelihood (Chambers and Conway, 1992: 10)	43
Figure 2.5	Interrelationships among women, morbidity and mortality, coping strategies and food security	46
Figure 2.6	Sustainable livelihoods analysis framework (DFID, 2002: 5)	46
Figure 3.1	Map showing location of Maphephetheni (Braby, undated)	54
Figure 3.2	Number of members/respondents per garden club in the Maphephetheni uplands for 2003 (n = 79) and 2004 (n = 73)	56
Figure 3.3	Monthly income contribution to households by garden club members (n = 73) in 2004	59
Figure 3.4	Percentage of educational attainment among adult household members (15-85 years old) in 2003 (n = 598)	60
Figure 4.1	An example of a typical Maphephetheni uplands household drawn by the Sizathina garden club, 13 th October 2003	66
Figure 4.2	An example of a group sustainable livelihoods analysis framework poster	

	prepared by the Siphesihle garden club, 27 th October 2003	67
Figure 4.3	An example of a seasonality chart prepared by the Sizathina garden club, 13 th October 2003	69
Figure 5.1	A head of cabbage at Inkanyezi community vegetable garden in the Maphephetheni uplands, 6 th October 2004	78
Figure 5.2	Beetroot and onion at Siyajabula community garden, 11 th October 2004	79
Figure 5.3	A water source and dry land at Inkanyezi community garden, October 2004	79
Figure 5.4	A block making project (incoming generating project) at Siphesihle community garden, 18 th October 2004	81
Figure 5.5	Community latrine building project at a Inkanyezi community garden member's homestead, October 2004	81

LIST OF TABLES

Table 2.1	The effects of morbidity and mortality on livelihood capitals (Topouzis, 2000: 18 & Mutangadura et al., 1999: 47)	25
Table 3.1	Levels of education for participating garden club members in the Maphephetheni uplands in 2003 (n = 79)	57
Table 3.2	Occupations of household members in the Maphephetheni uplands area, 2003 (n = 598)	61
Table 4.1	A list of household consumption coping strategies in the Maphephetheni Uplands (CARE/WFP, 2003: 11)	72
Table 4.2	Consumption coping strategies grouped and ranked by community groups in the Maphephetheni uplands in 2004	73
Table 4.3	Assigning numeric values to relative frequency – the relative frequency categories (CARE/WFP, 2003: 14)	74
Table 5.1	Sources of income and their contribution to total household income among the Maphephetheni uplands community garden households (n = 68), 2005	84
Table 5.2	Sources of income from small scale commercial enterprises and contribution to total household income in the Maphephetheni uplands (n = 68), 2005	86
Table 5.3	Sources of food consumption within the past 30 days, Maphephetheni uplands (n = 68), October 2005	89
Table 5.4	Contribution of community gardens in comparison to home gardens and commercial agriculture in Maphephetheni (n = 68), October 2005	91

Table 6.1	Percentage of garden club members (women, n = 79) contributing to some of the community garden tasks in the Maphephetheni uplands, September and October 2003	96
Table 6.2	Participation of community garden club members (n = 79) in household chores in the Maphephetheni uplands, 2003	98
Table 6.3	Time spent by garden club members (n = 79) on household chores and agriculture-based activities in the Maphephetheni uplands, 2003	99
Table 7.1	Age category versus health status crosstabulation, Maphephetheni, 2003 (n = 356) and 2004 (n = 401)	104
Table 7.2	Gender versus health status crosstabulation, Maphephetheni, 2003 (n = 596) and 2004 (n = 441)	105
Table 7.3	Causes of death in 2003 (n = 598) and 2004 (n = 633) in the Maphephetheni uplands	106
Table 7.4	Caring for the sick versus household chores crosstabulation, Maphephetheni, 2003 (n = 598) and 2004 (n = 441)	109
Table 8.1:	Income category versus health crosstabulation, Maphephetheni, 2003 (n = 596) and 2004 (n = 441)	113
Table 8.2:	Income category versus care for the sick crosstabulation, Maphephetheni uplands, 2003 (n = 598) and 2004 (n = 441)	114
Table 8.3:	Grants category versus cost of illness category crosstabulation, Maphephetheni, 2003 (n = 598) and 2004 (n = 632)	115
Table 8.4:	Selling agricultural produce versus caring for the sick crosstabulation,	

	Maphephetheni uplands, 2003 (n = 598) and 2004 (n = 441)	116
Table 8.5	Type of grant or income source of household members in 2003 (n = 598) and 2004 (n = 633) in the Maphephetheni uplands	118
Table 8.6	Use of financial coping strategies by households to help cope with income shocks in the Maphephetheni uplands in 2003 (n = 79) and 2004 (n = 73)	121
Table 8.7	Asset ownership in the Maphephetheni uplands among study participants in 2003 (n = 79)	123
Table 8.8	Percentage of migrants and residents in 2003 (n = 598) and 2004 (n = 633) in the Maphephetheni uplands	124
Table 8.9	Household consumption coping strategies applied in the uplands in 2004 (n = 73)	127

LIST OF ACRONYMS AND ABBREVIATIONS

AIDS	Acquired Immuno Deficiency Syndrome
ANC	African National Congress
ASCRA	Accumulation Savings and Credit Associations
ASSA	Actuarial Study for Southern Africa
CAADP	Comprehensive Africa Agriculture Development Programme
CARE/WFP	Cooperative for Assistance and Relief Everywhere/World Food Programme
CBOs	Community Based Organisations
CSI	Coping Strategy Index
DFID	Department for International Development
FANTA	Food and Nutrition Technical Assistance
FAO	Food and Agricultural Organisation
FSB	Financial Services Board
FSWG	Food Security Working Group
GI1-GI10	Group Informants 1 to Group Informants 10
GCIC	Government Communications Infonautics Corporation
GIS	Geographical Information Systems
HDI	Human Development Index
HDIs	Human Development Indeces
HEARD	Health Economics and HIV/AIDS Research Division
HIV	Human Immunodeficiency Virus
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IOM	International Organisation for Migration
MCACD	Ministry for Constitutional Affairs and Constitutional Development
MRC	Medical Research Council
NDA	National Department of Agriculture
NEPAD	New Economic Partnership for Africa's Development
NGOs	Non Governmental Organisations
ROSCA	Rotating Savings and Credit Associations
SADC FANR VAC	Southern Africa Development Community Food, Agriculture and

	Natural Resources Vulnerability Assessment Committee
SAfAIDS	Southern Africa AIDS Information Dissemination Service
SDRE	Sustainable Development of Rural Ecosystems
SLA	Sustainable Livelihoods Analysis
SPSS	Statistical Package for Social Sciences
SSA	Sub-Saharan Africa
TB	Tuberculosis Bacilli
UNAIDS	United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WHO	World Health Organisation

CHAPTER 1: THE PROBLEM AND ITS SETTING

1.1 Motivation, relevance and importance of the study

Factors affecting household food security and rural agricultural production systems are multiple. Morbidity and mortality, the focus of this study, are among causes of food insecurity (FAO, 2002). Morbidity and mortality are used in this study as important determinants of socio-economic impacts and variations within households, particularly in the wake of Human Immunodeficiency Virus and Acquired Immunodeficiency Syndrome (HIV and AIDS). In the context of HIV and AIDS, morbidity and mortality affect rural populations, and particularly women - the backbone and mainstay of household food security and rural livelihoods (Dorrington et al., 2005 & 2001; Baier, 1997).

Studies by Booysen et al. (2002), Mutangadura (2000 & 2001: 34-47), Whiteside (2000), and Barnett and Whiteside (1996: 3-4) indicate that morbidity and mortality have over time exacted a more severe burden on affected households with a large proportion of households experiencing illness or death. These studies have found that in most cases, morbidity and mortality experienced by households exhibited typical HIV and AIDS patterns. This means that morbidity and mortality could represent a considerable socio-economic burden to affected households. Cumulative burdens of morbidity and mortality over time may push households deeper into poverty (Booyesen et al., 2002). In the context of the HIV and AIDS epidemic, it is essential to understand how morbidity and mortality impact on coping strategies of women so that appropriate support and interventions can be designed.

A preliminary study conducted by Hendriks and Kiamba (2003) in Umbumbulu, KwaZulu-Natal in 2001 found that morbidity and mortality eroded the resource and asset bases of rural households. This small preliminary study indicated the need for further research to understand the impact of morbidity and mortality on coping strategies of rural women and indicated the need to identify means for assisting households to cope with the effects of increasing health and funeral costs to protect livelihoods in the face of low incomes and reduced household labour potential. Annan (2002) stated that a combination of food insecurity and morbidity and mortality

threaten the backbone of Africa – rural women who uphold African societies and whose work is the economic foundation of such rural communities.

Research is needed to explore and investigate effects and impacts of morbidity and mortality on rural women's coping strategies among community garden clubs in the Maphephetheni uplands in rural KwaZulu-Natal. In this study, community gardens are defined as a piece of land where community members, particularly community garden club members share basic resources such as land, water, sunlight, "ubuntu" (community mindedness and social support), skills and experience to produce food crops, mainly vegetables for consumption and subsistence income. The term subsistence income used in the above definition refers to basic income or meagre income obtained from community gardening, an "associated" activity of subsistence agriculture. In other words, subsistence income is an output of community gardens which provides some basic living. A community garden is primarily a physical locality and all operations or activities occurring on the piece of land. Community gardens as defined here provide access to women who participate in them to grow crops for food consumption and basic income, and enhance social relationships necessary to cope with livelihood shocks. Community gardens are treated in this study as a form of subsistence agriculture as the activities of the community gardens were for subsistence production. Subsistence agriculture, by way of definition, describes farming and associated activities which together form a livelihood strategy where the main output is consumed directly by the household, where there are few if any purchased agricultural inputs and where only a minor proportion of output is sold. Subsistence agriculture is characterised by a close relationship between general activities of the household (for example, care for the sick, support relations between adult members, home maintenance and food processing) and the production of crops and care of animals to feed that household. According to this definition, where a minor output is sold, income is obtained from subsistence activities.

Lack of research on women's coping strategies in Maphephetheni constrains development of supportive government interventions to address the consequences of illness and death. Morbidity and mortality threaten the already precarious position of poor rural women with respect to agricultural livelihoods. Hence, five critical issues are investigated namely: (1) the role of community gardens in livelihood security; (2) roles and significance of women in community

gardens and non-farm activities; (3) socio-economic impacts of morbidity and mortality on assets; (4) labour constraints created by deaths and sickness and; (5) household coping strategies with respect to illness, death and food insecurity. These critical issues could likely give rise to various implications in terms of household income generation, cropping patterns, farm yields in general (quantity and quality of crop yield), knowledge, skills and experience in farming practices and management (Barnett & Rugalema, 2001; Baier, 1997). Therefore, this study sets out to identify socio-economic impacts that morbidity and mortality have on coping strategies of women with respect to livelihood stresses or shocks such as food insecurity, morbidity and mortality.

1.2 Statement of the research problem

Researchers have found that morbidity and mortality have detrimental effects on the effectiveness of various productive activities of rural households (de Waal and Whiteside, 2003: 1234-37; Rugalema, 2000: 535-545; Barnett and Blaikie, 1992: 268-272), reducing agricultural production and income. Morbidity and mortality could affect access to both social and economic resources, and the level and type of vulnerability in different types of households (Barnett and Blaikie, 1992). The resources important for coping with morbidity and mortality in the household include labour, cash savings, household skills of caring, income generating activities and extended members of the family (social capital). Bos and Leutscher (1995) asserted that households confronted with morbidity and mortality use a number of coping strategies to overcome livelihood insecurity. Thus, the research problem was formulated as follows: investigation of the socio-economic impacts of morbidity and mortality on coping strategies of women to overcome livelihood insecurity in the Maphephetheni uplands, rural KwaZulu-Natal.

1.3 Sub-problems

The study problem was explored through the following sub-problems.

Sub-problem 1: What is the role played by community gardens in livelihood security in the Maphephetheni uplands, rural KwaZulu-Natal?

Sub-problem 2: What is the role of women in community gardening and non-farm livelihood activities?

Sub-problem 3: How do changes and trends in morbidity and mortality affect coping strategies among the participating community garden club members and their households in the Maphephetheni uplands, rural KwaZulu-Natal?

Sub-problem 4: In which specific ways do morbidity and mortality threaten coping strategies of women in the Maphephetheni uplands?

1.4 Study limitations

This study focuses particularly on women engaged in community vegetable gardening in the Maphephetheni uplands, rural KwaZulu-Natal. The study is confined to the subsistence agriculture sector which comprised of women with high vulnerability to illness, death and food insecurity (Hendriks, 2002; Dorrington et al., 2001; Baier, 1997). The study did not allow for an assessment of whether community garden club participants differed from those that did not engage in community gardening activities in the Maphephetheni uplands. This means that community members that were not engaged in community gardening activities were excluded from this study. Nevertheless, all community garden club members had an equal chance of participating in the surveys and group sustainable livelihoods analyses.

Although the original aim of the study was to measure and investigate the effects of HIV and AIDS, it was not possible to know accurately who was infected with HIV without testing. Furthermore, HIV and AIDS are still highly stigmatised in South Africa and this renders people unwilling to discuss or give AIDS related information, particularly about household members. Furthermore, ethical considerations constrain investigation of HIV and AIDS. Thus it was decided to focus this study on morbidity and mortality. Therefore, it is not known whether morbidity and mortality were due to HIV or not, but lessons can be drawn from the results that are relevant to HIV trends that could impact on women's coping strategies.

1.5 Study assumptions

First, the study is grounded in the assumption that morbidity and mortality among poor rural households and communities, particularly amongst vulnerable groups such as women could be due to high HIV and AIDS prevalence rates in rural KwaZulu-Natal. Second, the study assumes that development of non-erosive coping strategies and resources could mitigate the impacts of morbidity and mortality.

Third, it was assumed that the survey questions were unambiguously phrased, and that translation from English into isiZulu by research assistants did not change the meaning or interpretation of the questions.

Fourth, an assumption was made that community garden club participants answered the questions honestly, and that their answers were a true indication of their situations. To encourage honesty, before the group sustainable livelihoods analyses and individual household surveys were conducted, assurance of the confidentiality of answers and results was given to all community garden club participants.

Fifth, as the garden club members were women, the study explored household coping strategies and their impact on women's involvement in the community gardens. The roles of women are crucial in households and livelihoods. Therefore, it was assumed that women are, *de facto*, household managers and that women would be the people to effect the coping strategies explored through the Coping Strategies Index, that is, women are primarily responsible for portioning rations, serving meals, balancing food budgets, gathering wild food and purchasing decisions around food.

Finally, all community garden club members present at the time of interviews and sustainable livelihoods analyses participated. It was assumed that those who were present represented the community garden club.

1.6 Thesis structure and organisation

This thesis is organised into nine chapters. This introductory chapter presents the research problem and its setting and outlines the motivation, relevance and importance of the study and presents the statement of the research problem, sub-problems, study limitations and assumptions. The following chapter presents a detailed review of related literature. In this chapter, particular attention is accorded to the five livelihood capitals (as a conceptual framework) and coping strategies. The chapter demonstrates that a vital relationship exists between the five types of capital and coping strategies that communities or households apply in the face of stresses such as food insecurity, sickness and death.

Sample selection and characteristics of the study area are presented in chapter three. Chapter four discusses the study methodology. An innovative mix of qualitative and quantitative methods was applied. To appreciate the extent to which morbidity and mortality impact on women's coping strategies, chapter five discusses the contribution of community gardens, an associated activity of subsistence agriculture, to livelihoods of study participants and their households while chapter six focuses on the role of women (both garden club and other female household members) in community gardening, entrepreneurial activities and household chores.

Changes and trends in morbidity and mortality on the community garden club members and their households are discussed in chapter seven. Chapter eight directs its focus to the specific impacts of morbidity and mortality on women's coping strategies, including community gardening. Chapter eight discusses household financial, labour and consumption coping strategies practised by participating households in the Maphephetheni uplands.

Finally, chapter nine summarises the main findings and presents conclusions for the study. Chapter nine proposes strategies and recommendations to be considered at policy level, and closes with identification of areas for study improvement and further research.

CHAPTER 2: REVIEW OF RELATED LITERATURE

To better understand the socio-economic impacts of morbidity and mortality on coping strategies among community garden club members and their households, chapter two begins by exploring why HIV or AIDS is a shock and stress for rural households and the extent of HIV and AIDS at global, regional, national and provincial levels.

2.1 Why HIV/AIDS is a shock and stress for rural households: an overview of the unique nature and effects of HIV/AIDS

AIDS is currently one of the greatest threats to global development and sustainable livelihoods (Moore, 1999: 1) and integral to understanding vulnerability (Devereux, 2002: 657-675). Chambers (1989: 1-7) and Webb and Harinarayan (1999: 292-305) define vulnerability as exposure to risk and stress, and the inability to cope with the consequences. Thus, vulnerability has two dimensions: exposure and susceptibility. Exposure is the likelihood that an individual or household will be affected by a shock or threat/stress, and susceptibility is the individual or household ability to cope with such threats (Devereux, 2002: 657-675). Vulnerability is dynamic, influenced by social, economic, demographic, and political trends and events (Leischenko and O'Brien, 2002; Bohle et al., 1994). The dynamic and localised nature of vulnerability hinders the ability of households to predict vulnerability beyond a few years (or even a few months) (Leischenko and O'Brien, 2002; Bohle et al., 1994).

Ellis (2002) asserted that in order to analyse the extent of vulnerability, it was crucial to look at factors causing assets and coping capabilities to deteriorate, rather than at assets and coping strategies themselves; and that resilience and sensitivity can be used to assess vulnerability. Ellis (2002) made a distinction between resilience and sensitivity where resilience refers to the ability of a system to bounce back from a shock while sensitivity refers to the extent to which a system is impacted by a shock. Thus, a vulnerable livelihood is the one that exhibits low resilience and high sensitivity. Furthermore, HIV and AIDS are a shock and stress for rural livelihoods because it is unique in nature and impacts for the reasons that follow.

Van Dyk (2001) asserted that HIV causes AIDS. AIDS in itself is not a specific illness, but a syndrome or collection of many conditions that manifest because HIV weakens the immune system. Van Dyk (2001) defined AIDS as a syndrome of opportunistic diseases, infections and certain cancers – each or all of which were potentially fatal. Opportunistic diseases included diarrhoea, skin infections, pneumonia, cryptococcal meningitis, kaposi's sarcoma (a rare form of skin cancer) and tuberculosis (TB) (van Dyk, 2001). Opportunistic diseases kill the most productive and reproductive members of society in the 15-49 age bracket, thus increasing household dependency ratios, reducing household productivity and caring capacity, and interrupting the transfer of local knowledge and skills from one generation to the next (TANGO International, 2003).

TANGO International (2003) noted the private nature and complex cultural attitudes towards sex, leading to silence, denial, stigma and discrimination around HIV issues. Furthermore, HIV has a long incubation period between infection and onset of major opportunistic illnesses, although the virus can be transmitted during this time (van Dyk, 2001). This, coupled with the fact that HIV does not immediately manifest, markedly increases the chances of transmission. HIV and AIDS affect both the rich and the poor, though it is the poor who face the most severe impacts. Poverty drives the HIV epidemic, while AIDS in turn prolongs and deepens poverty, making it harder to escape from deprivation (de Waal and Whiteside, 2003: 1234-37). Research shows that HIV or AIDS affects both men and women and is not gender-neutral (Steinberg et al., 2002). As many women are marginalised and powerless, they are more at risk of being exposed to HIV and less likely seek health care (TANGO International, 2003; Mutangadura et al., 1999).

In describing why HIV/AIDS is a shock and stress for rural households, de Waal and Whiteside (2003: 1234-37) posit the “new variant famine” hypothesis, which is a new paradigm for analysing the causes and trajectories of food insecurity in southern Africa, afflicted by a combination of shocks including a generalised AIDS epidemic, drought and poverty. The hypothesis points to the way in which HIV/AIDS accentuates existing shocks and stresses (de Waal and Whiteside, 2003: 1234-37). De Waal and Whiteside (2003: 1234-37) outline four factors which are characteristic of the “new variant famine” hypothesis namely:

- household level labour shortages that are attributable to adult morbidity and mortality, as is the increase in numbers of dependents;
- loss of assets and skills resulting from increased adult mortality;
- the burden of care is large for sick adults and children orphaned by AIDS and;
- vicious cyclic interactions between malnutrition and HIV.

Thus, HIV/AIDS is a shock that threatens the ability of poor households to sustain livelihoods and food security. To highlight the reasons why HIV/AIDS is a shock and stress for rural households, the following section discusses the extent of HIV/AIDS at global, regional, national and provincial levels.

2.2 The extent of HIV/AIDS at global, regional, national and provincial levels

Approximately 25 years after the first clinical evidence of AIDS was reported, AIDS has become the most devastating disease humankind has faced (United Nations Programme on HIV/AIDS (UNAIDS), 2001; UNAIDS, 2000). Although estimates vary, even the lowest estimates are frightening indicators of the extent of the HIV/AIDS epidemic.

Globally, more than 60 million people have been infected with the virus since the epidemic began (UNAIDS, 2000). About 40 million people worldwide were living with HIV at the end of 2001 (UNAIDS, 2002). Recent statistics show that the HIV/AIDS pandemic claimed nearly 3.1 million lives in 2005. More than half a million (570,000) were children (UNAIDS/WHO, 2005). More than 25 million people with HIV/AIDS have died since the first case of HIV/AIDS was identified in 1981 and an estimated 4.9 million new HIV infections occurred worldwide during 2005 (UNAIDS/WHO, 2005). About 3.2 million (65 percent) of these infections occurred in sub-Saharan Africa and 2.4 million people in sub-Saharan Africa died of AIDS in 2005 (UNAIDS & WHO, 2005). UNAIDS and WHO (2005) also reported that among young people aged 15-24 years, an estimated 6.9 percent of women and 2.2 percent of men worldwide were infected by HIV/AIDS at the end of 2004.

Southern Africa remains the worst affected sub-region in the world with South Africa having the highest number of people living with HIV in the world (UNAIDS/WHO, 2005). The Southern Africa Development Community Food, Agriculture and National Resources Vulnerability Assessment Committee (SADC FANR VAC) (2003) indicated that HIV and AIDS have contributed to the magnitude and depth of problems faced by rural households or communities in southern Africa. However, what is much less understood is the extent of contribution of HIV/AIDS to problems faced by rural households, and how HIV/AIDS varies by demographic structure, and morbidity and mortality profiles of households. Household food insecurity cannot be properly understood if morbidity and mortality are not factored into the analysis (SADC FANR VAC, 2003). Baylies (2002) also notes that morbidity and mortality can be a shock to household food security on the one hand, but on the other, they have such distinct effects, especially when related to HIV/AIDS epidemic.

At the national level, the HIV/AIDS epidemic in South Africa is most often described through statistics too overwhelming for most to understand (Health Economics and HIV/AIDS Research Division (HEARD), 2002; Medical Research Council (MRC), 2001). A South African National Department of Health Study (2005) estimated that 5.6 million South Africans were HIV positive by the end of 2003, including 3.1 million women (15 to 49 years), 2.4 million men (15 and 49 years), and 96,228 babies. Similarly, based on antenatal data, another study (Dorrington et al., 2005) estimated that 6.29 million of 46 million South Africans were HIV positive at the end of 2004, including 3.3 million women and 104,863 babies, giving a total population prevalence rate of 11 percent. The total population prevalence rate of 11 percent is estimated from the Actuarial Society of South Africa's 2002 Demographic and AIDS Model based on a thorough analysis of a range of epidemiological and demographic data including antenatal surveys up to 2002. Based on the South African National HIV Survey, researchers estimated that 10.8 percent of all South Africans over the age of 2 years were living with HIV in 2005 (Department of Health, 2005). Among the age group of 15 to 49 years old, the South African estimated HIV prevalence was 16.2 percent in 2005. According to the National HIV and Syphilis Antenatal Sero-Prevalence Survey in South Africa, HIV prevalence among pregnant women was 29.5 percent in 2004, up from 27.9 percent in 2003, and 26.5 percent in 2002 (Department of Health, 2004). Although antenatal surveys are not necessarily representative of the entire population, they give a good

indication of trends and magnitudes of the epidemic. When compared with previous estimates, the impact of HIV/AIDS has been revised downwards as better epidemiological data has emerged. The poor are more vulnerable to HIV/AIDS and consequences of the epidemic are most severe among the poor (Baylies, 2002). Literature demonstrates that in South Africa, women are not only more likely than men to be infected with HIV, but also tend to be infected at a younger age (Steinberg et al., 2002).

At the provincial level, Smith (2000: 6-7), Pitts (2001), HEARD (2002) and the 2004 National HIV and Syphilis Antenatal Sero-Prevalence Survey in South Africa, note that KwaZulu-Natal has the highest HIV infection rates in the country (Department of Health, 2005). HIV prevalence was highest among pregnant women in 2004 in KwaZulu-Natal (40.7 percent) followed by Gauteng (37.1 percent) and Mpumalanga (30.8 percent). It was estimated that in 2002, 36.5 percent of women attending antenatal clinics in KwaZulu-Natal were HIV positive (HEARD, 2002). These statistics are aggregated at the provincial level and are not available for specific localities such as Maphephetheni. Nevertheless, the provincial HIV/AIDS statistics suggest that the impact of HIV is similarly likely to have a marked effect on households in the Maphephetheni uplands.

A study conducted in rural area of Umbumbulu of KwaZulu-Natal in 2001 indicated that HIV/AIDS had begun depleting the household resource and asset base of rural households (Hendriks & Kiamba, 2003). This has important implications for subsistence agriculture-based livelihoods and women's coping strategies. The cumulative impacts of HIV/AIDS on food availability, food access and coping capacity are compounded, resulting in amplified negative effects on overall household food security. Haddad and Gillespie (2001: 487-511) argued that livelihoods-based analysis of linkages between food security and morbidity and mortality showed that the impact is systemic, affecting all aspects of rural livelihoods, particularly in the context of HIV/AIDS. Therefore, effective analysis of the causes and outcomes of HIV/AIDS requires a contextual understanding of livelihoods unique to a given area and social groups (Gillespie et al., 2001). SADC FANR VAC (2003) further demonstrates that different morbidity, mortality and demographic profiles have different effects on food security, institutional processes and outcomes.

Having briefly examined the unique nature and effects, and the extent of the HIV/AIDS epidemic from the global, regional, national and provincial perspectives, morbidity and mortality trends in relation to women and food security are explored in the next sub-section.

2.3 Morbidity and mortality, women and food security in southern Africa

Accurate estimates of AIDS mortality in South Africa and Africa are not easily accessed because often death is not registered as HIV/AIDS related on death certificates (Statistics South Africa, 2005). However, the rising numbers of recorded deaths in South Africa and the registered causes of death give an indication of the effect of HIV/AIDS on mortality (Statistics South Africa, 2005). Statistics South Africa (2005) states that the number of registered adult deaths in South Africa increased by 63 percent from 272,221 in 1997 to 441,029 in 2002 and the major cause of these increases was likely HIV/AIDS. The prevalence level of HIV in the age group 20 to 24 is about 25 percent among women, compared with about ten percent among men. The figures for the 15 to 19 age group reveal an even more startling discrepancy – less than one percent prevalence among teenage boys, compared to about eight percent among teenage girls (UNAIDS/WHO, 2006).

According to the Human Development Report (United Nations Development Programme (UNDP), 1998), HIV/AIDS is one of the most significant global epidemics, taking nearly 12 million lives between 1981 and 1998. UNDP (1998) indicated that 83 percent of recorded AIDS deaths have been in Africa. This calls for special attention since HIV/AIDS impacts directly on food production by reducing the work force to produce food. Morbidity and mortality consume money and assets that could be used to purchase food and agricultural inputs such as new seeds, fertilisers and pesticides (Muchopa and Mutangadura, 1999 cited by Mutangadura et al., 1999). FAO studies (1995, 1997, 1998, 2001 & 2002) and Laier (1996) have shown that women play a crucial role in many aspects of crop production in sub-Saharan Africa, especially in maintaining household food security. Similarly, Devereux (2002: 657-675), Toupozis (2002), Devereux and Maxwell (2001: 1-12), Mutangadura (2001: 34-47); Muchopa and Mutangadura (1999, cited by Mutangadura et al., 1999), FAO (1995 & 1997) and Moser (1993) found that women produce between 60 and 80 percent of food in most developing countries and are responsible for half of

food production of the world. However, their key role as food producers and providers has only recently been recognised, as is their critical contribution to household food security. FAO studies (1997, 1998, 2000 & 2001) confirmed that women were the mainstay of small-scale agriculture, farm labour force and day-to-day family subsistence. However, women face more difficulties in gaining access to resources than men, compounded by the HIV/AIDS epidemic which results in morbidity and mortality. In many African countries women provide 33 percent of the work force for agricultural activities; comprise 70 percent of agricultural workers; provide 60-80 percent of the household labour for food production and sale; undertake 100 percent of the processing of basic food stuffs; do 90 percent of hoeing and weeding; and undertake 60 percent of harvesting and marketing activities (FAO, 1998). This shows that women are critical food producers and are central to the questions of food and livelihood security.

2.4 National food security and household food security

To appreciate how morbidity and mortality influence coping strategies of women, this section explores the concepts of food security and household food security. But, to better understand the concepts of 'food security' and 'household food security', it is useful to define the concept of 'household' as adopted in this thesis. The concept 'household' is defined as a unit where children and adults belonging to a family and an extended family reside in one or more houses at the same location (Steinberg et al., 2002). Barnett and Whiteside (2002) stated that a typical view of a household was that it would go through the following stages: formation, when people come together to reproduce; maturity as they have children and bring them up; and dissolution as children leave home, then parents grow too old to work and finally die. Barnett and Whiteside (2002) also acknowledged that there are many cultural variations, for example, adult children may remain in a household and be joined by their spouses, three generations may live in one household, or siblings may form joint households with their spouses and children.

A study by Cooperative for Assistance and Relief Everywhere and the World Food Programme (CARE/WFP) (2003) defined a household as a group of people who eat together or eat from the same pot. This view is supported by the World Bank (2000) who defined a household as the smallest homogenous consumer unit. However, these definitions are incomplete because they

exclusively focus on food consumption and fail to demonstrate the relationships that exist among food insecurity, income poverty, vulnerability and malnutrition. This study uses the former definitions advanced by Steinberg et al., (2002) and Barnett and Whiteside (2002) for three reasons. First, the definitions proposed by these authors see the household as a micro-level unit of analysis in that it is the level that mediates between the realities and choices perceived by individual members (Wolf, 1991). Second, the definitions encompass three important dimensions of a residence, family and extended family which are critical in satisfying primary needs of rural households. Finally, the dimension of reproductivity is crucial to generating social networks needed for support in times of shocks and stresses such as food insecurity, morbidity and mortality.

The concept of ‘food security’ was developed as early as the 1970s, while the construct of “household food security” is more recent (Maxwell, 1991: 15-48; Maxwell, 1996: 155-170). Maxwell (1991: 15-48) states that the bulk of food security literature dates from the 1980s and there are more than 200 different definitions of the term. There was an increased concern about national food security stocks in the 1970s that changed to a preoccupation with individual entitlements in the 1980s (Maxwell, 1996: 155-170). This means that food security is interpreted in many varied ways. However, the widely accepted definition advanced by the World Bank is: “access of all people at all times to enough food to have an active, healthy life.” (World Bank, 2000 cited by Devereux & Maxwell, 2001: 1-12). According to the World Bank (2000) definition, the definition:

- (a) emphasises access to food rather than the supply of food and focuses on whether people have sufficient command over food, and methods to supplement entitlement where deficient or absent;
- (b) emphasises the access to food by all people, implying that an aggregate view of food security is insufficient, the situation of individuals and social groups at risk is of critical importance; and

Thus, the World Bank (2000) and Sen (1981) focused essentially on the potential access to food by households. The World Bank (2000) regards the household as the smallest homogenous

consumer unit that is relevant to economic policies, although its definition refers to individual access to food. The World Bank definition focuses exclusively on food consumption and does not demonstrate or emphasise the relation between food insecurity, poverty, vulnerability and malnutrition.

Similarly, according to Johnson (1996: 110-126) and Sen (1981), food security included several dimensions and the following were the three most important components at household level. First, availability occurs when sufficient supplies of appropriate food are consistently available to all individuals. Such food can be supplied through household production, other domestic output, commercial imports or food aid. Second, access is ensured when households and all individuals have adequate resources to obtain appropriate nutritious food. Access depends on income available to the household, distribution of income within households and food prices. Finally, utilisation refers to efficient biological use of food through adequate diets, potable water, adequate sanitation and access to health care. Johnson (1996: 110-126) notes that effective food utilisation depends largely on knowledge within households of food storage and processing techniques, basic principles of nutrition and proper child-care and management of illness.

Maxwell (1991:15-48) provided a broader definition of food security and explained that a country and its people can be regarded as food secure if the existing food system functions well enough to remove the fear of food insecurities. According to Maxwell (1991: 15-48), food security was achieved when poor and vulnerable groups, specifically women and children, have continual access to food. This definition emphasises the availability of food and capacity to obtain food as the essential elements of food security (Alamgir & Arora, 1991; Kennedy & Haddad, 1992: 2-22; Kuzwayo, 1994). People can achieve food security either through own production or income received from labour or transfers (e.g. grants). Barraclough (1991: 1) described food security as “sustained and assured access by all social groups and individuals to food adequate in quantity and quality to meet nutritional needs”. A well functioning food system ensures and protects the food security of individuals in ways that everybody has enough to eat to live a healthy and active life (Kutzner, 1991).

Since the early 1970s, the focus on food security has shifted from a global, national perspective to one that focuses on entitlement to adequate food at household or individual levels. A deficit at household level means that the household can neither produce nor buy the necessary food because of a lack of food production or buying power (Armar-Klemesu et al., 1995: 1-7; Geier, 1995; Alamgir & Arora, 1991; Staatz, D' Agostino & Sundberg, 1990: 1311-1317).

In contrast with food security, food insecurity is the lack of access to adequate food supplies and can be chronic or temporary in nature. Reutlinger (1985: 7-11) explained chronic food insecurity as a sustained inadequate diet caused by the lack of resources to produce or acquire food, while transitory food insecurity is the result of a temporary decline in the household access to adequate food. Transitory food insecurity is a consequence of instability in food production and prices, or in household income. The worst form of food insecurity is famine (Geier, 1995; Maxwell, 1991: 15-48; Reutlinger, 1985: 7-11). Chronic malnutrition is caused by consistent poverty and is a long term problem for which solutions and dimensions are more comprehensive and wide ranging than food insecurity (Hussain, 1991; Valdes, 1981). Against the background of food surpluses in world markets, food insecurity is regarded as an indication of individual and national poverty, and not an indication of global shortages of food supplies.

The availability of food at household level depends on many variables such as net food production; land, labour, capital, knowledge and technology; social production relationships; food prices and supplies in the market; cash income derived from labour; profit received from the selling of products; net food reserves; credit and transfers from governments and other internal and external donors (Alamgir & Arora, 1991). Negative changes in any of these aspects affect household food security. If changes are temporary and the survival strategy of the household fails, a situation of temporary food insecurity develops. If changes are the consequence of structural problems and continue over a long period, the situation can cause chronic food insecurity (Alamgir & Arora, 1991). Kutzner (1991) stipulates that to ensure food security for all people at all times, policy makers and governments in both the developed and the developing countries should know which groups of people are exposed to hunger and the reason for that exposure.

In summary, food security refers to the capacity to obtain adequate food. It differs from food self-sufficiency that implies that a country or household produces enough for own use. A high degree of self-sufficiency in food is not necessarily a prerequisite for food security (Van Zyl, 1994: 156-163; van Zyl & Kirsten, 1992: 170-183). A valid argument can be advanced in the case of South Africa. South Africa is a good example of a country that achieved self-sufficiency in food with its agricultural policies promoting food production for own use during the apartheid era. However, this did not ensure that all South Africans enjoyed food security. A large part of the population experienced serious food insecurity (van Zyl, 1994: 156-163; van Zyl and Kirsten, 1992: 170-183). The issue of food insecurity is of critical and important concern to South Africa and developing countries in Africa. Undoubtedly, food insecurity can be compounded by morbidity and mortality which in turn threaten women's coping strategies.

2.5 Food security situation in southern and South Africa

To appreciate the impact of morbidity and mortality on household coping strategies for livelihood security, it is important to note that southern Africa has been experiencing food insecurity for more than a decade (SADC FANR VAC, 2003). According to SADC FANR VAC (2003), the apparent and immediate cause of regional food insecurity is traditionally and often cited as inadequate rainfall leading to marked reductions in agricultural production. However, this simple explanation masks a suite of underlying factors that have an impact on food security in the region. These factors include: governance issues; the cumulative effect of periodic droughts; dietary patterns that emphasise maize; the varied impacts of structural adjustment programmes; weak government safety net programmes; government policies that inhibit free market performance; internal terms of trade; chronic poverty; and HIV/AIDS (SADC FANR VAC, 2003).

WFP (2002) noted that the biggest difference between the regional food crisis of 1992 and the current situation is the dramatic increase of chronic morbidity and mortality due to HIV/AIDS. The prevalence rates of HIV/AIDS are high, and their linkages with food security so pronounced, that de Waal (2002) has deemed the southern Africa food emergency as a "new variant famine", requiring new approaches towards understanding food security in the context of the HIV/AIDS

epidemic. Given the accentuated fragility of livelihood systems brought on by HIV/AIDS, researchers (SADC FANR VAC, 2003) question whether the current food crisis in southern Africa has crossed a threshold and precipitated a downward cycle of food insecurity – irrespective of climatic performance that will last for years to come.

In South Africa alone, it was estimated that 39 percent of the population was vulnerable to food insecurity in 1999 (Mgijima, 1999). Similar figures are given by Statistics South Africa (2000) that reports that 35 percent of the total population or 14.3 million South Africans, particularly women, children and elderly, were vulnerable to food insecurity in 2000. According to Bonti-Ankomah (2001), twenty two percent of South African children, the majority in rural areas and commercial farms, were reportedly stunted due to malnutrition. Nine percent of children were underweight in 2001. Studies conducted amongst rural households in Limpopo province showed that 58 percent were food insecure, and an additional 17 percent were vulnerable to food insecurity in 1996 and only 25 percent were food secure (Mekuria & Moletsane, 1996: 309-313). Along the same trend, Leroy et al. (2001: 5-17) found that 54 percent of households surveyed in Limpopo province consumed insufficient protein and energy and 69 percent consumed insufficient fat whereas 42 percent of the rural households were in both groups. This means that in South Africa, as in many other countries in Africa, food security is a critical and important concern. Food insecurity is exacerbated by the high incidence of HIV that makes households more vulnerable to food insecurity.

Bonti-Ankomah (2001) observed that among poor households, particularly in rural areas, a significant number may be considered resource poor and food insecure although South Africa as a country enjoys food-sufficiency. South Africa is often categorised as one of the countries in Africa that could be considered self-sufficient in terms of white maize and wheat. Van Rooyen (2000: 7-21) and van Rooyen et al. (1996: 301-308) provided a more comprehensive picture of how South Africa is self-sufficient in these two major crops. Van Rooyen (2000: 7-21) and van Rooyen et al. (1996: 301-308) determined such trends after having assessed the period from 1991 to 1994 where the country produced over 88 percent of its grain and field crop requirements, 164 percent of its horticultural crop requirements and 96 percent of livestock production. Van Rooyen (2000: 7-21) and van Rooyen et al. (1996: 301-308) concluded that South Africa has achieved

food self-sufficiency for most staple food crops, in spite of general declining food self-sufficiency. Nevertheless, a large number of households are food insecure. A genuine food security situation exists when both the country and households are food secure, that is, have access to adequate food for a healthy and active life at all times of the year and have the capacity to both produce and buy.

McLachlan and Kuzwayo (1997) found that women and children shoulder the long-term consequences of food insecurity due to the negative impacts of morbidity and mortality on learning capacity (in the case of children) and productivity in adult life. Furthermore, McLachlan and Kuzwayo (1997) suggested that poverty in South Africa was the main cause of household food insecurity. Most poor households are highly dependent on wage incomes due to low or lack of viable and non-erosive livelihood strategies (Bonti-Ankomah, 2001). Thus, the following section examines two key farm production parameters and the crucial role of the farm (subsistence agriculture) and farm household systems. This aims to put the food security situation in southern and South Africa into a broader perspective, while at the same time better understanding the effects of morbidity and mortality on women's coping strategies.

2.6 Two key farm production parameters that impact on household food security

Morbidity and mortality represent potentially debilitating shocks to farm households. Studies of the impact of morbidity and mortality on the productive capacity of rural households suggest that their effects are strongly felt on two key farm production parameters (Annan, 2002; Dorrington et al., 2001; Baier, 1997). First, household labour quality and quantity are reduced by illness and death, initially in terms of productivity when HIV infected household members become ill, and later when the supply of household labour falls following the death of such individuals (Dorrington et al., 2001; Baier, 1997). HIV/AIDS is not gender-neutral. Given the heterosexual nature of HIV infection in Africa, the probability that more than one adult woman per household is infected with HIV is high (Dorrington et al., 2001). Here, a compounding factor is that infection rates are higher among women, who account for 70 percent of the agricultural labour force and 80 percent of food production labour (Dorrington et al., 2001; Baier, 1997).

Furthermore, as women devote productive time to caring for the sick, labour availability is adversely affected (Bachman & Booyen, 2003; Gitting, 1990).

The second factor of household agricultural production affected by morbidity and mortality is the availability of “disposable cash income” (International Food Policy Research Institute (IFPRI), 2001). During illness, household financial resources may be diverted to pay for medical treatment and eventually to meet funeral costs (IFPRI, 2001; Roth, 2001: 39-50; Baier, 1997). Such financial resources may have otherwise been used to purchase agricultural inputs, such as occasional extra-labour or rather complementary agricultural inputs such as new seeds, fertiliser and pesticides. Family assets such as livestock might be sold off. This supports the view that morbidity and mortality are to be perceived as development problems of critical importance, rather than simply health issues (du Guerny, 2002). To see this in its perspective, the following section highlights the significant and crucial role of agricultural production systems and implications for food and livelihood security.

2.7 The critical role of the farm and the farm household systems: implications for food and livelihood security

Looking at agriculture from a systems perspective has the advantage that one can identify the dynamics, possible points of intervention and impacts of such interventions throughout the farm and farm household systems. Food and Agriculture Organisation (FAO), in its publication on AIDS in 1995 attempted to place it in a systems approach and distinguished between several levels embedded in one another (FAO, 1995). To elaborate this, two systems level are examined. First, a farm system level is dealt with followed by a farm household system to show the impacts of morbidity and mortality on women’s coping strategies.

2.7.1 Role of farm systems

Farming systems can be identified throughout a number of variables, e.g. location, climate, types of crops and livestock or labour. Some systems are more resilient than others. A system with ample rain, well distributed through the year, fertile soil and a wide range of crops, is much less

sensitive to the loss of labour than a system with insufficient rain, poor soils and few crops (du Guerny, 2002). Du Guerny (2002) identifies many kinds of African farm systems, for example, maize/legumes/pulses; pastorals/smallholder paddy production/estate production; horticulture/cassava or finger millet (shifting cultivation) that attempt to mitigate against various risks.

Du Guerny (2002) also observed that cash crops were the first to be lost because morbidity and mortality result in labour shortages as the available labour force is diverted to subsistence crops. By losing main income generating sources, the farm system regresses. This could have serious consequences, such as loss of income required for school fees or to supplement a diet based on cassava or sweet potatoes. Morbidity and mortality force the farm system to change in order to cope with the impacts of morbidity, mortality and food insecurity. Farm systems could be major operational and concrete interventions to boost the resilience of threatened farm systems.

2.7.2 The role of farm-household systems

In a pure subsistence model one would find only the farm and household as components. This model is being replaced by a model with three components (du Guerny, 2002). Du Guerny (2002) asserted that the non-farm was now integrated into the household and farm components. This means that the farm-household is more and more dependent on non-farm sources of income (figure 2.1); whether cash to purchase agricultural inputs such as seed, fertilisers, pesticides or equipment into the farm, improve the nutrition of the household or pay for school fees, medical or funeral costs (Roth, 2001: 39-50). Sometimes this entails sending labour to urban centres. Therefore, the structural link between the farm-household and the outside world, established through the migration of household members, creates the channel for the flow of both cash and HIV (du Guerny, 2002). Du Guerny (2002) argued that if this link fulfilled the need for cash it can be the household's salvation, but if it brings in HIV, it can be the household's fate.

Most studies demonstrate that a farm-household system or farming system (figure 2.1), which is vulnerable from an agricultural perspective, is also a fertile ground for the spread of HIV leading to morbidity and mortality (du Guerny, 2002). To this effect, farmers assume household and

individual survival (coping) strategies that entail various risks that can make them more vulnerable to exploitation such as migration to work in dangerous jobs or sex work. Clearly, both the farm and farm-household systems point to the importance of agriculture in sub-Saharan Africa while simultaneously emphasising constraints brought about by morbidity and mortality.

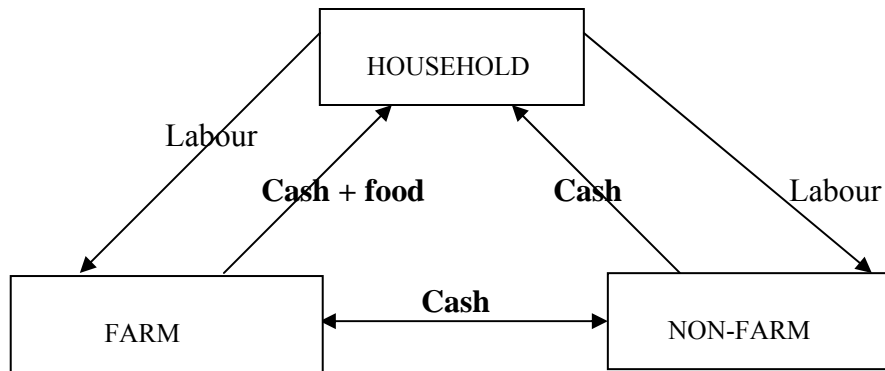


Figure 2.1: A farm household system (FAO, 1995: 8).

2.7.3 Role of community gardens (a form or activity of subsistence agriculture) in rural livelihoods

The role of agriculture in sustainable rural livelihoods, and particularly in the African rural household economy, is generally acknowledged by most studies (FAO, 2004; Machethe, 2004; New Economic Partnership for Africa's Development (NEPAD), 2004; National Department of Agriculture (NDA), 2002; Department for International Development (DFID), 2002; Devereux & Maxwell, 2001: 1-12, cited by Devereux & Maxwell, 2001; Mutangadura et al., 1999; Delgado, 1998; DFID, 1998). However, there is no consensus on whether agriculture is the most appropriate way to promote or improve sustainable rural livelihoods in southern Africa. One school of thought argues that since the majority of people in developing countries are in rural areas and are engaged in agricultural production or agriculture-related activities, agriculture is the most effective way to improve sustainable livelihoods (Machethe, 2004). The second school of thought recognises the contribution of agriculture to improving rural livelihoods but attaches more importance to non-agricultural activities (e.g. rural non-farm enterprises and household chores such as water and fuel collection) (McIntosh & Vaughan, 1996:91-118; Gardner, 2005).

In 2002, the South African government proclaimed rural agricultural development a priority (National Ministry of Provincial and Local Government, 2002; National Department of Agriculture (NDA), 2001; NDA, 1995; African National Congress (ANC), 1994) despite ongoing debate over the potential of agriculture to achieve sustainable livelihoods in rural South African communities (Delgado, 1998). The potential for agriculture (subsistence or commercial) to contribute positively to sustainable livelihoods lies in the fact that agriculture can transform the South African rural household economy and provide livelihood opportunities to the poor (Machethe, 2004). In rural development literature, agriculture is considered as the best vehicle to reduce income poverty and improve sustainable livelihoods (Machethe, 2004; World Bank, 2003).

Another study involving 1031 households by May et al. (2000, cited by FAO, 2004) conducted in KwaZulu-Natal, highlighted the important role of agriculture to sustainable livelihoods, particularly in poverty alleviation. The study concluded that households engaging in agricultural activities tend to be less poor than those not participating in agricultural production. Furthermore, the study noted that the level of farm income increases with total household income suggesting that agriculture remains an important source of income even for households deriving a significant proportion of their income from non-farm sources. The World Bank (2003) and May et al. (2000) also found that some households engaged in informal commercial enterprises moved to own or paid labour in commercial agriculture, suggesting that agriculture was a potentially better option as a source of income for these households than informal activities.

Subsistence agriculture provides subsistence income and food security (NDA, 2001). Studies show that 40 percent of population of South Africa is primarily dependent on agriculture and agriculture is one of the most important livelihood strategies for rural households (van Zyl & Kirsten, 1997; Sender & Johnston, 1996). Between 40 and 50 percent of South Africa's population is classified as living in poverty (Terreblanche, 2002; Woolard & Leibbrandt, 1999, cited by FAO, 2004) while 25 percent of the population is categorised as ultra-poor (Machethe, 2004). Although South Africa is self-sufficient in food production, about 14 million people are reported to be vulnerable to food insecurity and 43 percent suffer from food poverty (National Treasury, 2003). Studies have also shown that typical livelihood strategies in rural South Africa

comprise diverse income sources (May, 1998; Delgado & Siamwalla, 1997) including agriculture (Aliber, 2001; NDA, 1999).

2.8 Specific impacts of morbidity and mortality on small-scale agricultural production, food and livelihood security

Different scholars acknowledge that agriculture is critical to food and livelihood security of most rural populations in sub-Saharan Africa (Barnett & Whiteside, 2002; du Guerny, 2002; Whiteside, 2002: 313-332; van Aardt, 2002; Cross, 2001: 133-147; Desmond, 2001: 54-58; Devereux & Maxwell, 2001: 1-12; Mutangadura et al., 1999; Topouzis, 1998; Pretty, 1996). The agriculture sector is a source of employment and income. Conventionally, subsistence agriculture describes farming and associated activities, which together form a livelihood strategy, where the main output is consumed directly by the household, where there are few purchased inputs and where only a minor proportion of output is marketed (Topouzis, 2000). As noted in chapter one, this study adopts this definition.

Evidence from household impact studies show that households affected by morbidity and mortality generally are poorer than non-affected households (Booyesen et al., 2004; Booyesen et al., 2002; Baier, 1997). Households in rural Chanyanya in the Kafue District in Zambia affected by chronic illness, for example, had an annual income 46 percent lower than households in the same area that were not affected by chronic illness (Mutangadura & Webb, 1999, cited by Topouzis, 2000). Zambian households that suffered a paternal death experienced a drop in monthly disposable income in excess of 80 percent (Nampanya-Serpell, 2000), whereas households in rural Thailand affected by an adult death saw total household income and per capita income respectively drop by 70.7 and 68.4 percent (Kongsin and Watts, 2000; Parker et al., 2000).

Assets are important to livelihoods. With the prevalence of HIV/AIDS, chronic illnesses and death strip individuals, households and communities of different forms of capital – human, financial, social, physical and natural (UNAIDS, 2002). This has serious implications for food

security and livelihoods in general. Each of these capitals is now examined in turn in table 2.1 to highlight the impact of morbidity and mortality on women's coping strategies.

Table 2.1 The effects of morbidity and mortality on livelihood capitals

Livelihood capital	Household level effects/possible indicators of morbidity and mortality
Human capital	Change in size and composition of households; orphans; temporary migration for wage work; change in household dependency ratio; withdrawal of children to work on or off the farm for wages; intra-household reallocation of labour; increased fallow and decline in crop yields/variety; long working hours; loss of agricultural knowledge, practices and skills; change in access to human resources; sex on a casual or commercial basis.
Financial capital	Reduction in income from farm and sources; liquidation of savings accounts; seeking remittances from family; sale of stores of value; borrowing from informal sector ; sale of livestock; exhaustion of credit resources; pledging of future crops; change in income generating activities among female-headed households; change in wage earning among female-headed households.
Natural capital	Reduction in soil fertility; declines in on-farm conservation; decreased bio-diversity due to asset stripping (selling of firewood, increased harvesting of wild food and game); fallow land; decline in genetic resources; sale of livestock; sale of land; appropriation of land by relatives; decline in quality of permanent crops.
Social capital	Disruption of relationships with extended family members; weakening of linkages to formal and informal community organisational/social support groups; community labour sharing.
Physical capital	Selling of assets such as livestock, household goods, equipment, tools and radios.

Source: UNAIDS, 2002: 23; Topouzis, 2000: 18; Mutangadura et al., 1999: 47.

Table 2.1 highlights the effects at household level of morbidity and mortality on the five sets of capital. Such effects have critical implications for women's coping strategies. It has already been noted that agriculture is one of the most important sectors in many developing countries, particularly when measured by the percentage of people dependent on it for their livelihoods. Although the sector may produce only 20 percent of Africa's wealth, it provides a living or means of survival for as much as 80 percent of a country's population.

According to an FAO (2000) report, seven million farm workers in Africa have died from AIDS-related causes since 1985 and 16 million more are expected to die in the next 20 years. Agricultural output, especially of staple products cannot be sustained in such circumstances, and the prospect of widespread food shortages and hunger is real. Production effects of HIV/AIDS on agriculture, household food security and rural livelihoods are negative. Drimie (2002), FAO (2002; 1995), and Ngwira et al. (2001) outline such effects as decreases in area planted; decline

in crop yields; changes in cropping patterns; loss of agricultural knowledge, experience and skills; and decline in household labour quality and quantity. In the absence of increased yields, planted area will decrease production entitlement to food for the household (Drimie, 2002). This has serious implications for the longer-term trajectory of rural farming systems. By only farming a portion of the normally cultivated area, it is possible that the unused portions will come under increasing pressure to be farmed or claimed by other local or external farmers. In the longer-term, HIV/AIDS affected households become susceptible to losing land tenure rights. In the same manner, access to agricultural inputs such as seed and fertilisers directly affects crop yields.

Another critical aspect to agricultural production is the effect of morbidity and mortality on cropping patterns. Households with morbidity and mortality tend to change cropping patterns, shifting to crops that are less labour demanding, have shorter production cycles, and require fewer capital inputs (Drimie, 2002; FAO 2002; Ngwira et al., 2001; and FAO, 1995). Implications of changing cropping patterns are significant for both dietary intake, and the amount of available income for household purchases including health care and education. A logical consequence of increased financial pressures is that affected households are forced to sell livestock to meet immediate consumption needs, medical and funeral costs. But, not all people or households sell livestock and other household assets. The sale of livestock is only done as a last resort since many African communities value their livestock so much so that they do not easily dispose of them (SADC FANR VAC, 2003).

2.9 Roles of funeral savings clubs in rural South African households

Roth (2001) noted that savings were critical to poor households in helping them cope with livelihoods shocks. Savings acted as investment and strengthen safety nets by diversifying income and enabling the building of assets (Roth, 2001). Roth (2001) identified three principal ways through which households can save, namely through rotating savings and credit associations (ROSCA) and accumulation of savings and credit associations (ASCRA), lay-by systems and commercial banks as three principal ways of saving.

Roth (2001) identified four categories of funeral insurance theoretically available to semi-rural households namely: formal assistance insurers, formal friendly societies, informal non-profit insurers and informal for-profit insurers. Formal assistance insurers are those that are registered with the Financial Services Board (FSB) and are profit-making insurers that provide funeral cover aimed at low income South Africans. Formal friendly societies operate on a non-profit basis, often church initiated but registered with the Financial Services Board. Informal non-profit insurers are those schemes owned by members, run on a non-profit basis and not typically registered with the Financial Services Board. These informal insurers tend to form in neighbourhoods and members are often neighbours. To join an informal society, members have to pay an initial fee followed by monthly premiums determined by the society and members (Roth, 2001). Informal insurers use their intimate knowledge of local socio-economic conditions and local funeral practices to mould their products and services to fit the needs of the community.

Roth (2001) identified the need to heed to cultural pressure to provide relatively expensive funerals in the wake of HIV/AIDS epidemic. This need is putting increasing pressure on poor households in South Africa and formal and informal insurers, to the extent that traditional funeral insurance might break down altogether, depriving the poor of a decent burial.

Dercon et al. (2004) asserted that households in Ethiopia and Tanzania try to reduce the consequences of income risk through application of a variety of risk coping strategies, including engaging in forms of risk-sharing via informal arrangements. Dercon and de Weerd (2002) noted that empirical investigations on risk-sharing arrangements have largely focused on informal arrangements between households and individuals based on concepts such as the extended family, neighbours or village-wide networks, but not on well defined networks or associations formed with a specific focus on insurance. Participation in these formal or informal savings or insurance groups reduces the risk that households in crisis situations will turn to coping strategies such as selling assets or keeping children from attending school in order for them to contribute to the household.

2.10 Gendered analysis of HIV/AIDS, roles and significance of women in community gardening

It is noted in this chapter that household food insecurity in southern Africa cannot be properly grasped if the impacts of poor health and mortality due to HIV/AIDS are not factored into the analysis (SADC FANR VAC, 2003). However, this is not a complete picture. Gender dimensions of the epidemic also have to be factored in (Gupta, 2000). This section explores how men and women experience the effects of the epidemic differently and analyses the impacts of morbidity and mortality on women and agriculture. The section proceeds to discuss the roles and significance of women in community gardening.

The extent to which many women are marginalised and rendered powerless in terms of sex negotiations, increases their risk of being exposed to HIV. The UNAIDS (2002) reported that in the age group of 15-30 years, women account for a greater proportion of AIDS cases than men. Women are more prone to HIV infection than men, yet women's role and place in subsistence agriculture is critical to food security and livelihoods in general. Contribution of women to food production and food security is of critical importance. Women are often the main food producers, income earners and custodians of family health and nutrition (Alamgir & Arora, 1991). It has already been acknowledged (Ellis, 1999) that in Africa today, 85 percent of rural women are involved in agriculture and produce 80 percent of the food consumed by the household. A study carried out by the World Bank (2000) showed that in southern Africa, 45.8 percent of men work away from home, leaving farming activities to women. Alamgir & Arora (1991) reported that there was a resident male household head in 35 percent of smallholdings in South Africa.

Muchopa and Mutangadura (1999, cited by Mutangadura et al., 1999) also outlined the important role of women in agriculture. The emerging picture is of the smallholder sector where women's labour and reproductive problems are invisible, yet their labour is vital for the maintenance and upkeep of the household. Literature (Topouzis, 2002; Devereux & Maxwell, 2001: 1-12) demonstrates that women play a major role in all developing countries in different aspects of agricultural production – subsistence crops, market gardens, cash crops and animal production. Women are primarily engaged in watering, planting, fertilising, weeding, harvesting, and

marketing, firewood and water collection, food processing and preparation, cooking and domestic work – activities that are typically labour intensive (International Fund for Agricultural Development (IFAD), 2001; Muchopa & Mutangadura, 1999 cited by Mutangadura et al., 1999). This supports the view that women in agriculture are an untapped source for agricultural growth (Muchopa & Mutangadura, cited by Mutangadura et al., 1999).

In addition to agriculture-related activities, a study by the Energy Research Institute (1984) found that women spend much time on household chores. In KwaZulu-Natal as a whole, about 150 million hours of work were used in gathering firewood each year. The same study (Energy Research Institute, 1984) found that in the Transkei in 1949, women spent a quarter of a 56 hour week on fetching water, wood and stamping and grinding mealies while in Tanzania, women spent 64 daylight hours per week working which included 11 hours for gathering wood. The Energy Research Institute (1984) argued that if wood gathering is counted as part of food preparation, more effort is consumed by the preparation of food than the growing of it. In similar studies (Rodda, 1993 & Momsen, 1991) the analysis showed that women and girls collected 84 percent of fuel and walked long distances to collect firewood. In Bangladesh, rural women and children spend an average of three to five hours daily collecting firewood, while in the Himalayas the average time spent on fuel collection is 7.2 hours (Rodda, 1993). Rodda (1993) noted that collecting water can be a tiring and arduous task that usually needs to be undertaken several times each day. Furthermore, Loewenson and Whiteside (1997) found that women carry a triple burden of generating income outside the home and for care-giving and maintaining family land. Thus, active care-giving for sick and dying relatives (household members) have been added to the women's existing workloads.

Given the central role played by women in agriculture and household chores, the prevalence of morbidity and mortality has devastating impacts on coping strategies and has important implications for agricultural production, food and livelihood security. The crucial role of women as critical food producers and mainstays of food and livelihood security is threatened by their susceptibility to HIV infection and vulnerability to AIDS, leading to morbidity and mortality (Steinberg et al., 2002). To this effect, women devise strategies to cope with the impacts of morbidity and mortality, and food insecurity.

2.11 Impact of morbidity and mortality on household coping strategies in subsistence agriculture-based livelihoods

Food and livelihood insecure households primarily access food and income by using coping strategies to satisfy immediate consumption and financial needs and adaptive strategies, which are long term alterations in the way households acquire sufficient food and income (Maxwell, 1995). The ability of households to cope with and recover from stresses and shocks is central to the definition of sustainable livelihoods (Davies, 1996). This section discusses the concept of “coping strategies” and the categories, types and sequence of application of coping strategies. The section closes by exploring the specific effects of morbidity and mortality on coping strategies.

2.11.1 What are coping strategies?

Use of the notion of coping strategies in attempting to explain household responses to disasters or adverse situations gained currency in the 1970s and 1980s when famine threatened and claimed lives of hundreds of thousands, if not millions, of people, particularly in north-east Africa and the Sahel region (Rugalema, 2000: 535-545). Since then the concept has been widely used to explain household responses to famines (Devereux, 1993; Rahmato, 1991; de Waal, 1989; Corbett, 1988). It is also important to note that the concept of coping strategies and its widespread use can be traced in the ascendancy of neo-liberal free-market ideology that was resurrected in the 1970s. In the neo-liberal worldview, households as economic agents were expected to cope with adversity on the basis of the knowledge of their specific environment (Rugalema, 2000: 535-545). The bedrock of the argument is that when confronted with adversity, households or individuals make rational decisions to overcome the situation and the assumption is that the market facilitates the process of coping. Thus in order to cope, households will engage with the market and make rational choices about which assets to dispose of and which to retain (Devereux, 1993: 52-59). Households thus juggle with their portfolio of activities to achieve the balance between needs and resources.

The rise of HIV/AIDS, however, has given the concept of coping strategies a new perspective, as it has now become widely employed in analysis of the impact of HIV/AIDS on households (Rugalema, 2000: 535-545; Topouzis, 2000). Rugalema (2000: 535-545) defined coping as overcoming a difficult situation so that after a disaster or other major setback, a household is able to regain its former living standard, or even surpass it. This implies that households and communities are able to rebuild their lives or rebound from the disaster, for example, assets disposed of are recovered and food production restored. This definition assumes that the coping process is achieved through a strategy, and that households have plans designed to cope with adversity.

Coping strategies are defined in this study as responses of poor and vulnerable groups of people to shocks and stresses such as death, illness and declining food availability and entitlements in abnormal seasons or years. Here, coping strategies are seen as characteristic of secure livelihood systems in times of stress and shocks (Singh & Titi, 1994). Vulnerable individuals, households and communities adopt coping strategies to minimise risk in their lives and incorporate changes into their livelihood systems (Topouzis, 2000).

Davies (1996 & 1993: 60-72) made the distinction between “coping strategies” (feedback mechanisms to deal with a short-term insufficiency of food) and “adaptive strategies” (long-term or permanent changes in the way in which households and individuals acquire sufficient food or income). Davies (1996 & 1993: 60-72) noted a number of weaknesses in the use of the term “coping strategies” in food security research: first, they are something of a catchall; second, they imply that people somehow ‘get by’ when in fact, coping strategies are an indication that things are getting worse; and third, they are almost by definition nutritionally unsustainable, and are likely to be economically and environmentally unsustainable as well.

Similarly, Rugalema (2000: 535-545) challenged the usefulness of the concept of “coping strategies” and questioned the wisdom of employing the notion of coping strategies to analyse the effects of morbidity and mortality associated with HIV/AIDS in rural Africa. The crucial point of Rugalema’s argument is that the concept is of limited value in explaining the household

experience in the context of HIV/AIDS because AIDS induced morbidity and mortality has an immense impact on rural households.

Rugalema (2000: 535-545) posited several reasons why the concept of coping strategies is of limited value and explored alternative ways of conceptualising the impact of HIV/AIDS in more detail. First, Rugalema (2000:535-545) defined the concept of coping strategies as being essentially concerned with the analysis of success rather than failure of the households as it implies that households are managing and persevering. This ignores evidence that households often dissolve completely with survivors joining other households. This runs contrary to a concept of strategies intended to avert the breakdown of household units. Second, Rugalema (2000: 535-545) argued that households do not act in accordance with a previously formulated plan or strategy, but react to the immediacy of need, disposing of assets when no alternatives are available.

Third, Rugalema (2000: 535-545) indicated that coping strategies tend to be defined as short-term responses to entitlement failure giving the impression that it involves few additional costs thereby obscuring the true cost of coping. Fourth, Rugalema (2000: 535-545) argued that households emerging from the effects of morbidity and mortality were far more insecure than they were before AIDS partly due to the devastating effects of HIV/AIDS on the household demographics and assets. Fifth, Rugalema (2000: 535-545) dismissed the premise that HIV/AIDS and famine are similar in their effects and impact on behaviour. Rugalema (2000: 535-545) argued that one of the dimensions that distinguishes HIV/AIDS from other disasters relates to the specific way in which HIV/AIDS affects household demography and assets. Unless the fundamental differences between HIV/AIDS and other disasters are factored in, wholesale adoption of the coping framework in analysis of the effects of the epidemic will remain problematic (Rugalema, 2000: 535-545). Finally, Rugalema's argument focused on the utility of the framework of coping strategies for shaping policy. In the case of HIV/AIDS, the rhetoric of coping strategies has become an excuse for doing nothing or too little to alleviate the effects of the epidemic on communities since households or communities will soon surmount the problem (Rugalema, 2000: 535-545). Overall, Rugalema (2000: 535-545) suggested a need to move beyond the narrow confines of the concept of 'coping strategies' in order to address the situation of HIV/AIDS with

the urgency it deserves including provision of support to alleviate suffering among affected individuals and households. Hence, Rugalema (2000: 535-545) suggested using the concept of “struggling” instead of “coping strategies”, particularly in the wake of HIV/AIDS.

De Waal and Whiteside (2003: 1234-37) argued that farmers and pastoralists developed sophisticated coping strategies that are characterised by considerable resilience – defined as the ability to return to a former livelihood on the basis of diversity of income and food sources – and accumulated skills, including knowledge of wild foods and kinship networks. Only when these coping strategies collapse are African societies faced with so-called entitlement failure. De Waal (1989, 2002) shared Rugalema’s view that as a result of HIV/AIDS, fewer vulnerable households could be expected to cope or recover from the periodic food security shocks to which they are constantly subjected.

Nevertheless, in this study, even though the usefulness and application of “coping strategies” is challenged by Rugalema (2000: 535-545) and De Waal (1989 & 2002), the distinction between “coping” and “failure to cope” is an important distinction to note in the famine literature (Dreze & Sen, 1989). In addition, while the use of the term “struggling” instead of “coping” strategies by Rugalema (2000: 535-545) explicitly and directly points to the difficult situations posed by shocks such as HIV/AIDS and food insecurity, the concept of “coping strategies” as used in this study emphasises and acknowledges the potential within or of people (despite being resource poor) to bounce back from adverse situations. Furthermore, the CARE and WFP (2003) stated that coping strategies were an indicator of household food security, and if coping strategies were tracked over a long period, a coping strategy index is useful for monitoring long-term trends in food insecurity. The coping strategies index provides a quantitative score for each household. This score is a cumulative measure of the level of coping and thus, a measure of food insecurity. The coping strategies index measures the frequency and severity of a household’s coping strategies for dealing with food insecurity (CARE & WFP, 2003; Christiaensen and Boisvert, 2000; Maxwell et al., 1999: 411-429). The information is weighted according to frequency and the perceived severity of each coping strategy, determined by community members in focus groups. The weighted scores are then combined into an index that reflects current and perceived future food security status. Comparing scores and averages gives a good comparison of overall

household food security and establishes the baseline for monitoring drought trends and the impact of interventions (Maxwell et al., 1999). The coping strategies index is an inverse measure (CARE & WFP, 2003). Increased coping strategies indicate a decrease in food security. Likewise, a decrease in food security results in increased frequency and severity of coping strategies. This means that the more people have to cope, the less food secure they are. Thus, in this sense, coping strategies are not positive, but rather indicate a decreasing food security situation.

A study using the coping strategies index methodology conducted in two districts of Kenya (Garissa and Kitui districts) found that the coping strategies index correlated significantly with food frequency, asset ownership, income and other measures of livelihood security (CARE & WFP, 2003). Asset ownership was negatively associated with coping strategies index scores. This means that more assets would imply both a higher level of wealth generally, and a greater capacity to cope with a shock without it necessarily affecting food security. The coping strategies were positively but weakly correlated with different kinds of income, including agriculture, livestock and labour, but negatively correlated with the number of income sources. This means that the greater the level of livelihood diversity, the greater the households' capacity to withstand the shocks. The study also found that many of the non-consumption strategies were correlated (at varying levels of significance) with the coping strategies index (CARE & WFP, 2003). This finding implies that the coping strategies index is an adequate indicator to capture the elements of food security, perceptions of vulnerability and broader patterns of coping.

Furthermore, the concept of coping strategies is closely related to the concepts of survival and threat. As noted earlier, coping is the capacity to respond to and recover from stressful situations or events. This suggests that vulnerability and the capacity to cope are opposite facets of the same complex. The more vulnerable one is, the less one has the capacity to cope and the more one tends to apply erosive coping strategies. Vulnerability and capacity to cope highlight three sets of causes, namely:

- (i) intra-structural, that is, age, gender, environment, demographic structure of the community;

- (ii) structural, for example, individual socio-economic status, services or resources available to the household or community and;
- (iii) super-structural, for example, literacy and/or illiteracy, culture, beliefs, and attitude of fatalism.

Coping strategies are preventative actions undertaken by people whose survival and livelihood are compromised or threatened (Singh & Titi, 1994; Davies, 1996 & 1993: 60-72). Coping strategies vary by region, community, social group, household, gender, age, season and time and are deeply influenced by the previous experience and closely related to resources and assets.

2.11.2 Categories, types and implications of livelihood coping strategies

One of the most common methods for identifying food insecure households or regions is to look at the frequency of application and types of coping strategies. Coping strategies are used to offset threats to a household's food and economic resources. The different types of coping strategies are markers of the severity of conditions, often categorised into four distinct stages of destitution (Corbett, 1988). It needs to be noted that there is a spectrum of situations that may precipitate crises, possibly ranging from normal, seasonally-linked low/zero production, to consecutive years of poor production, to natural disasters and armed conflict. When it comes to assessing food security, less emphasis is placed on seasonality-linked insecurity, and more is dedicated to identifying those that are experiencing a "spiralling-down", that is, progressively more drastic coping strategies are practiced due to worsening food security (Corbett, 1988).

There are several ways of categorising coping strategies. Coping strategies index includes four subsets: consumption food security strategies, expenditure strategies, income-generating strategies and migration strategies (CARE & WFP, 2003). Consumption food security strategies include items such as buying food on credit; relying on less preferred foods as substitutes for maize; regularly reducing the number of meals eaten per day; regularly skipping entire days without eating due to lack of money or food; eating wild foods that are not normally eaten; restricting consumption of adults so children can eat and; feeding working members at the expense of non-working household members. Expenditure strategies include avoiding spending

on health care or education in order to buy food. Income-generating strategies include items such as selling household assets or livestock.

With regard to expenditure and income generating strategies, Booysen et al. (2004) noted that households had four alternatives when it comes to responding to changes in income and expenditure. These alternatives are: borrowing money, using savings, selling some assets or migration to urban areas in search of salaried employment. Evidence from other household impact studies shows that households affected by HIV/AIDS-related morbidity and mortality first deplete savings and assets before borrowing money to alleviate financial pressures (Booyesen et al., 2004). For example, households in rural Thailand affected by an adult death first tried to cope with increased medical care expenses by employing savings, after which they considered borrowing money (Parker et al., 2000).

Migration strategies include sending children to relatives or friends' homes or migrating to find work. The role of migration in the HIV/AIDS epidemic has been explored in a number of studies (Booyesen et al., 2004; du Guerny, 2002). The predominant interest of such studies, though, has been with the spatial distribution of HIV prevalence rates and AIDS cases (Ellis, 1996: 999-1017) and the manner in which migration contribute to the spread of the virus (du Guerny, 2002; Soskolne & Shtarkshall, 2002: 1297-1307; Lurie, 2000: 343-347; Ellis, 1998: 1-38; UNAIDS & IOM, 1998: 445-468; Decosas et al., 1995: 86-828). Whiteside (2002: 313-332), Desmond (2001: 54-58) and Poku (2001: 191-204) have also emphasised how labour migration induced by rural poverty could contribute to the spread of HIV and how poor single mothers could be forced to become occasional sex workers in order to survive. Gillies et al. (1996: 351-363) and Nyamathi et al. (1996: 31-39) highlighted the important implications of homelessness, urban/rural migration patterns, migrant labour practices and the breakdown of social support networks in communities with limited access to social services in increasing the vulnerability of poor people to HIV/AIDS.

The Southern Africa AIDS Information Dissemination Service (SAfAIDS) (1999, cited by White & Robinson, 2000) included three different categories of coping strategies focusing on coping strategies to improve food security, raise and supplement income generating activities in order to

maintain household expenditure levels, and reduce or alleviate the loss of labour as illustrated in figure 2.2. Strategies aimed at improving food security include reduction in household consumption, reliance on less preferred and less expensive food and wild foods, sending of children away to live with extended family members and reduction of family size and begging. Strategies that aim to raise and supplement income in order to maintain household expenditure levels include income diversification, migration in search of salaried work/employment, borrowing and selling assets and using savings. SAfAIDS (1999, cited by White and Robinson, 2000) also identified coping strategies aimed at alleviating the loss of labour. Such strategies include intra-household re-allocation of labour, long working hours, withdrawal of children from school, hiring labour, using labour saving technologies, decreasing cultivated area and seeking help from relatives (Figure 2.2).

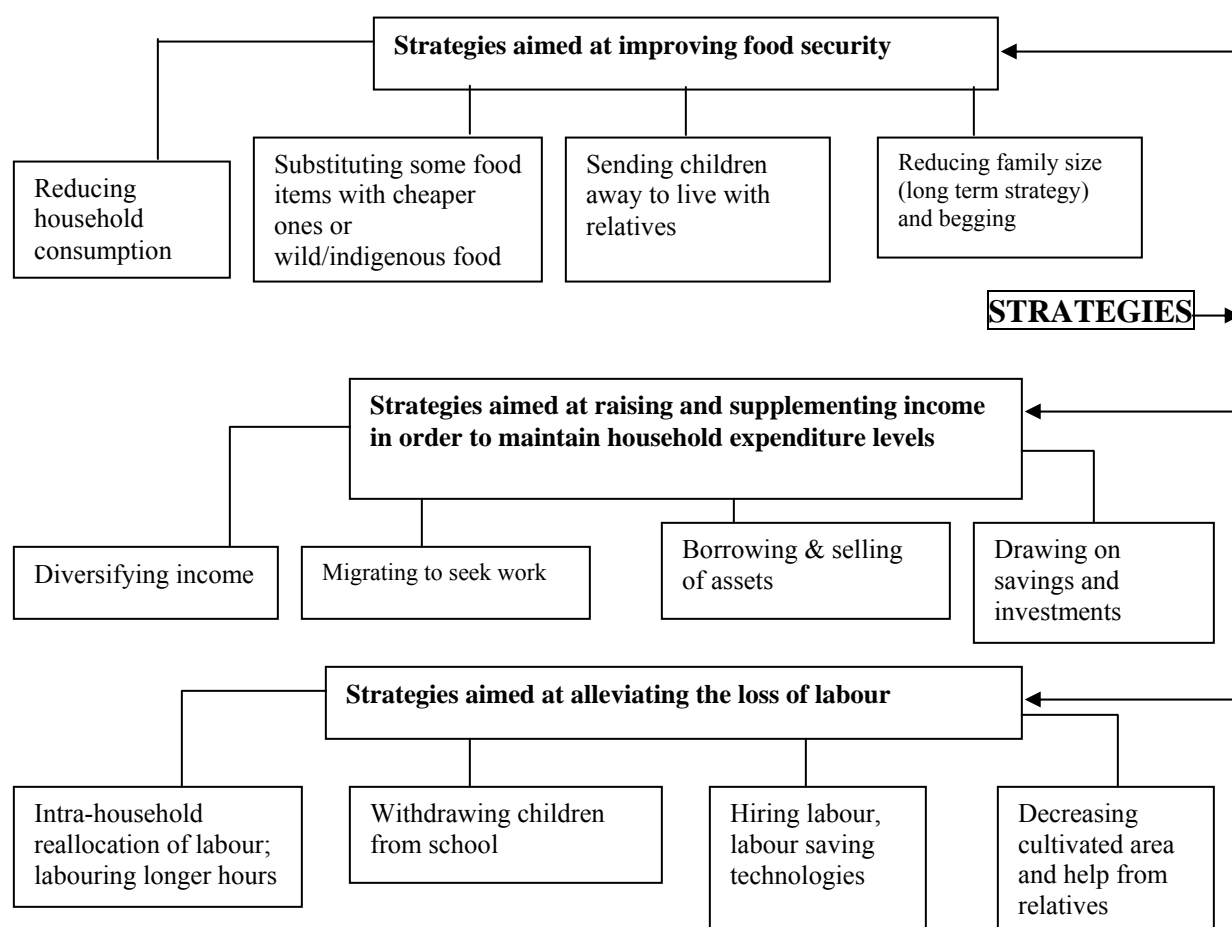


Figure 2.2 Coping strategies to address the impact of morbidity and mortality

Source: White & Robinson, 2000: 16.

Sale of chickens or goats is a classic and common coping strategy that households in sub-Saharan Africa engage in (White and Robson, 2000). Some level of livestock sale is normal and does not result in increased poverty. At a certain point however, household livestock holdings reduce to the level where production is no longer sustainable. In this case, livestock sales become erosive. Overall, various studies indicate that households with increased mortality, morbidity and high demographic loads are more often involved in strategies designed to cope with the effects of acute food shortages than other households (SADC FANR VAC, 2003; CARE/WFP, 2003; Barnett & Whiteside, 2002; White & Robinson, 2000; Donahue, 1998). This includes some strategies that may be erosive in nature.

Another way of categorising coping strategies is to classify them according to whether they are erosive, non-erosive or a failed coping (that is, failure to cope) (SADC FANR VAC, 2003). Non-erosive strategies are those that are easily reversible, that is, they do not result in permanent weakening the ability of households to cope. Non-erosive coping strategies decrease vulnerability in the short and long term. Erosive strategies are those that deplete assets in such ways or to such an extent that household resilience to future shocks is permanently weakened (SADC FANR VAC, 2003). For example, sale of productive land may compromise the future food security status of a household. This means that erosive coping strategies decrease vulnerability in the short term but increase vulnerability in the long term. The distinction made between erosive and non-erosive strategies depends on the availability of household assets. Failed coping strategies are those that increase vulnerability in both the short and long term (CARE & WFP, 2003). For example, reduction of food consumption may compromise the nutritional needs of the sick household members both in the short and long term. Migration to urban areas to engage in sex work increases vulnerability in the short and long term.

2.11.3 Sequence of application of coping strategies

Corbett (1988) and Davies (1993: 60-72) viewed coping strategies as a sequence of strategies in response to a crisis. Coping strategies are often applied in sequence so that household assets that enable a continuation of livelihoods are preserved (Ellis, 2000; Watts, 1983). Key factors determining sequence and stages of coping strategies occur out of commitment to household

resources and the degree of reversibility of each response. It is common that household wealth levels determine how many strategies are taken up, with poorer households left further along the continuum of coping strategies when a crisis ends (Corbett, 1988).

Watts (1983) observed the following sequence of coping strategies in response to famine in rural areas of Nigeria in the 1970s: collection of famine foods; borrowing grain from kin; sale of labour power; engaging in dry season farming; sale of small livestock; borrowing of grain or money from merchants; sale of domestic assets; pledging farmland; sale of farmland and finally permanent migration. De Waal (1989) suggested that food security crises can trigger multiple crises and so households respond to a range of crises, which might include health epidemics or physical security and food insecurity.

Corbett (1988) asserted that the first stage of household food insecurity is marked by an initial shortage of food, or inability to provide sufficient quantities of food to all household members. When food access lessens or resources wane, coping strategies employed might be dietary change (consuming maize instead of rice), reduction in the number of meals per day (rationing), gathering of wild foods, seeking wage labour, and borrowing from relatives (Corbett, 1988). If the shortage continues or worsens, the household may enter the second stage, where more drastic measures would be implemented such as selling non-productive assets (jewellery, goats); taking out loans outside of kinship networks; temporarily migrating for work (or land to farm); or skipping meals for an entire day (Corbett, 1988). In the third stage the situation worsens further, leading to sale of land, equipment, animals, and other productive assets (Corbett, 1988). Stage four, destitution, involves permanent migration, probably in search of food aid, due to the fact that household members are too weak and/or sick to work (Corbett, 1988). As can be seen, more severe (and sometimes more numerous) coping strategies are practiced under adverse conditions.

2.11.4 Impact of morbidity and mortality on coping strategies

Macro-level research over the last decade has drawn attention to the socio-economic impacts of poor health and increased deaths on national economies, specific sectors of the economy, heavily impacted groups, households and individuals (Topouzis, 2002; Devereux & Maxwell, 2001: 1-

12; World Bank, 2000; Mutangadura et al., 1999). Most of this research has been done at a national or regional level. Such studies recognise the general impacts morbidity and mortality have on the agricultural sector; but have provided little guidance to help define coping strategies to deal with the most direct impacts felt at the community and household levels in rural areas. Figure 2.3 illustrates social and economic impact of morbidity and mortality on rural women. The incidence of morbidity and mortality translates to, *inter alia*, shortage of labour, loss of skills, experience and knowledge, marked increase in poverty and loss of access to income and access to land. These effects are in turn exacerbated by HIV/AIDS and the stigma surrounding the epidemic as shown by Figure 2.3.

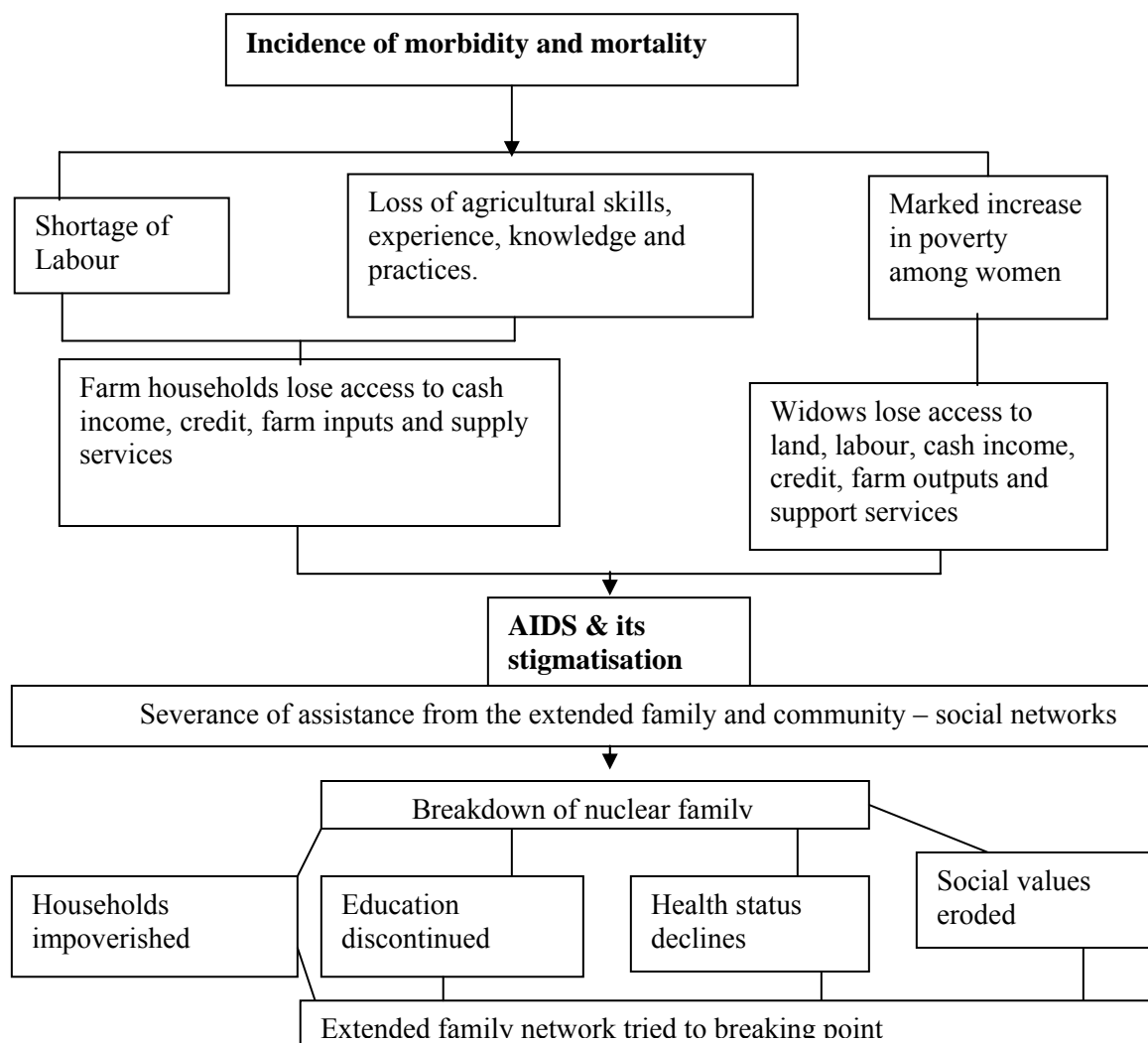


Figure 2.3 Socio-economic impact of morbidity and mortality on rural women

Source: FAO & Sustainable Development of Rural Ecosystems (SDRE), 2002: 23.

Baier (1997), Davies (1996) and Singh & Titi (1994) have demonstrated that farmers have developed mechanisms to cope with impacts of morbidity and mortality due to HIV/AIDS on rural livelihood strategies. White & Robinson (2000) and Donahue (1998) suggested that individuals and households go through processes of experimentation and adaptation as they attempt to cope with immediate and long-term household demographic changes (figure 2.3).

Although households with morbidity and mortality face particular and severe challenges, various studies (Barnett & Whiteside, 2002; White & Robinson, 2000; Davies, 1996; Singh & Titi, 1994) indicated that the actual sequencing of coping behaviour for household demographic changes was similar to that undertaken by rural households in response to acute food insecurity caused by crop failure. Some effects of morbidity and mortality on strategies to cope with such effects are illustrated in figure 2.3.

Research to highlight socio-economic impacts on agricultural production systems, household food security, coping strategies, and rural livelihoods, to enable the development of appropriate prevention and mitigation strategies for rural households or communities, especially those headed by women is needed (Food and Nutrition Technical Assistance (FANTA), 2000; Rugalema, 1999; Lucas, 1996; Hope, 1999; Barnett & Halswimmer, 1995; Barnett & Blaikie, 1992).

Morbidity and mortality erode the resilience of rural livelihoods by undermining the coping strategies applied by households to maintain economic viability (Rugalema, 1999). Morbidity and mortality have negative effects on dependency of household members. Food security coping strategies depend critically on labour availability, skill, knowledge and experience (FANTA, 2000). Coping strategies are significantly constrained by morbidity and mortality. Labour scarcity means that affected households face increasing difficulties in pursuing labour-intensive coping strategies, including labouring for money and collecting wild foods (FANTA, 2000).

Rugalema (2000: 535-545) found that adult mortality results in household dissolution and orphans. Survivors leave the household and join other households largely due to economic and social insecurities resulting from loss of a key household member (Rugalema, 2000: 535-545). Many food security coping strategies need skill, experience and a positive outlook on the future.

An important skill for food security is knowledge of wild foods and how to prepare them, which is handed down from mother to daughter (de Waal and Whiteside, 2003: 1234-37). If young women do not have this key knowledge, they may go hungry because of ignorance. More broadly, planning a year long strategy for a household to feed itself and protect the basis of its livelihood, requires experience about income generating activities, planning skills and networks that may be absent as a result of mortality.

De Waal and Whiteside (2003: 1234-37) noted that one of the main factors impoverishing rural Africa was the burden of providing care for orphans and sick adults. Women carry the burden of care in addition to other livelihood activities. Morbidity and mortality reduce the effectiveness of coping strategies. For example, reducing food consumption may be nutritionally unsustainable for sick household members and therefore dangerous (de Waal and Whiteside, 2003: 1234-37).

Overall, the effects of morbidity and mortality on household coping strategies illustrate the likely burden that morbidity and mortality exert on household finances and how these may push households deeper into poverty by means of rising indebtedness as a result of borrowing.

2.12 Sustainable livelihoods as an analytical framework

Approaches to sustainable livelihoods provide frameworks for working with people, building on strengths and realising people's potential (Farrington et al., 1999). Approaches to sustainable livelihoods acknowledge the effects of policies and institutions, external shocks and trends on rural livelihoods. Furthermore, the approaches recognise the complexity of rural life and puts rural households at the centre of development (Farrington et al., 1999). This means that approaches of analysis to sustainable livelihoods do not replace other rural development approaches but build on them (Carney, 1998).

In literature, there are numerous definitions of sustainable livelihoods. Farrington et al. (1999) and Chambers & Conway (1992) stated that the concept of "sustainable livelihoods" was based normatively on the ideas of capability, equity and sustainability, each of which was both an end and a means. A livelihood comprises people, their capabilities and means of living, including

food, income and assets. This means that a livelihood represents the interaction between assets and transforming processes and structures that generate a means of living, all conditioned by the context that individuals find themselves in (Carney, 1998). This entails that livelihoods are socially sustainable when coping with and recovering from stresses and shocks such as food insecurity, morbidity and mortality. Sustainable livelihoods maintain or enhance people's capabilities and assets, and provide sustainable livelihood opportunities for the future generation while not undermining the natural resource base (Carney, 1998). Chambers and Conway (1992) identified birth status, health, gender, education and migration, social, economic and ecological environment as determinants of livelihoods. Chambers and Conway (1992) identified three components and flows in a livelihood system (figure 2.4).

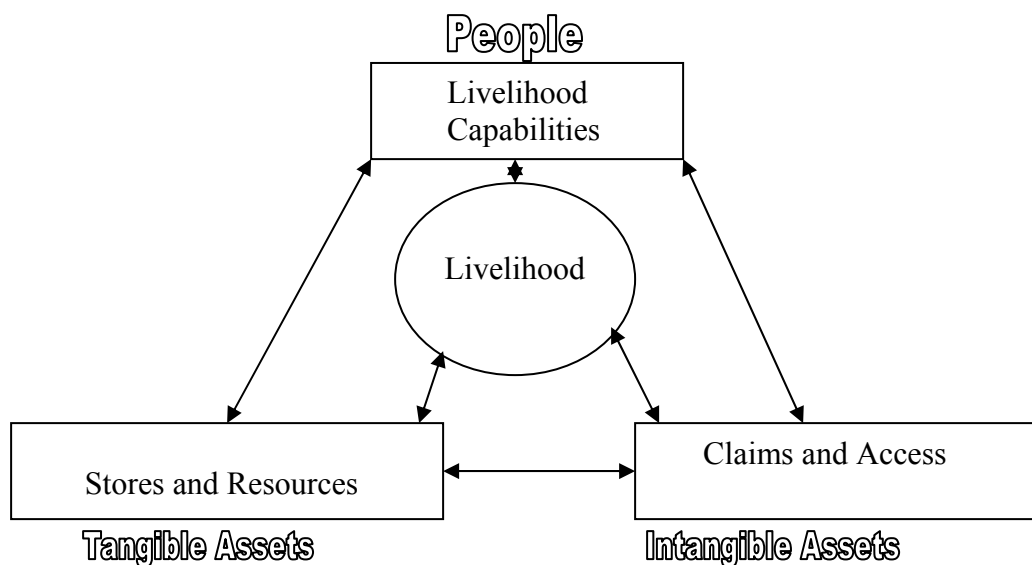


Figure 2.4: Components and flows in a livelihood (Chambers & Conway, 1992: 10).

Figure 2.4 demonstrates the core of a livelihood, which is expressed as a living system whose components and relationships are presented by tangible assets, intangible assets and people (livelihood capabilities). Of the three livelihood components and flows, the most complex is the portfolio of tangible and intangible assets (Chambers & Conway, 1992). Stores and resources are tangible assets commanded by a household. Stores include food stocks, stores of value such as gold and jewellery, and cash savings in banks of thrift and credit schemes. Resources include

land, water, trees and livestock; and farm equipment, tools and domestic utensils. Of these assets, people construct and contrive a living, using physical labour, skills, knowledge and creativity.

Sustainability is a function of how assets and capabilities are used, maintained and enhanced so as to preserve livelihoods (Chambers and Conway, 1992). Livelihoods approaches are concerned first and foremost with people and seek to gain an accurate and realistic understanding of people's strengths (assets or capital endowments) and how they endeavour to convert these into positive livelihood outcomes. Chambers and Conway (1992) asserted that livelihoods approaches were founded on a belief that people require a range of assets to achieve positive livelihood outcomes and that rural livelihood assets were the proximate determinants of food security at the household level. No single category of assets on its own is sufficient to yield all the many and varied livelihood outcomes that people seek (DFID, 2000).

For the purposes of this thesis, use of the DFID sustainable livelihoods framework is appropriate because it provides an analytical and conceptual tool for improved understanding of coping strategies of women in the context of morbidity and mortality, food insecurity and vulnerability. Sproull (1995) and Neuman (1994) argued that theory served as an orientation for gathering facts since theory specifies the types of facts to be systematically observed. Livelihood frameworks have become increasingly apparent features of development studies undertaken by the World Bank, the United Nations Development Programme (UNDP) and other development practitioners as livelihoods frameworks provide more comprehensive indicators to measure how the quantity and quality of resources change in a given geographic area as well as to link the terminology of economic development with sustainable use of resources (UNDP, 2001; DFID, 2000; World Bank, 2000). Morbidity and mortality are "livelihoods issues" impacting on many different aspects of people's lives (Appleton, 2000: 19-27).

Seeley and Pringle (2001) concurred with the findings of other studies (DFID, 2000; Appleton, 2000: 19-27) that livelihoods approaches offer a holistic way of addressing morbidity and mortality due to HIV/AIDS epidemic, and promote joint thinking across sectors and disciplines. These studies draw on the heuristic of capital terminology to identify several important categories

of resources upon which livelihoods are constructed. The DFID (2000) suggested that sustainable livelihoods approach posits that rural households possess five sets of livelihood assets essential to their livelihood strategies: human capital, social capital, financial capital, physical capital and natural capital. Using these assets and capabilities, households develop livelihood strategies to cope with physical, social, economic and political environments that contain a number of threats such as food insecurity, morbidity and mortality that render poor households vulnerable to negative livelihood outcomes.

Furthermore, Neeffjes (2000), Bebbington (1999: 2021-2044) and Scoones (1998) proposed that the sustainable livelihoods capitals framework was a useful approach for evaluating both the capability of people to construct meaningful livelihoods and to access changing capital resources as livelihood strategies evolve. In a similar vein, de Gruchy (2003) argued that sustainable livelihoods analysis viewed even the poorest households as possessing assets and that sustainable livelihoods analysis frameworks recognised a multiplicity of actors and relationships within a given livelihood strategy that allow poor households to adjust or respond to shocks. This means that households that face food insecurity on a regular basis have developed a series of coping strategies to deal with this problem. Morbidity and mortality represent an extreme source of livelihood and food insecurity shocks that require multiple coping strategies on the part of farm households (Rugalema, 1999 & 2000: 535-545). Figure 2.5 shows the interrelationships between women, morbidity, mortality, coping strategies and food security issues.

In the face of morbidity and mortality, women are largely affected since they do household chores and care for the sick in addition to farming activities, and in turn this has negative implications for food and livelihood security. To continue to maintain their households, women devise coping and survival strategies, which could be either erosive or non-erosive in nature.

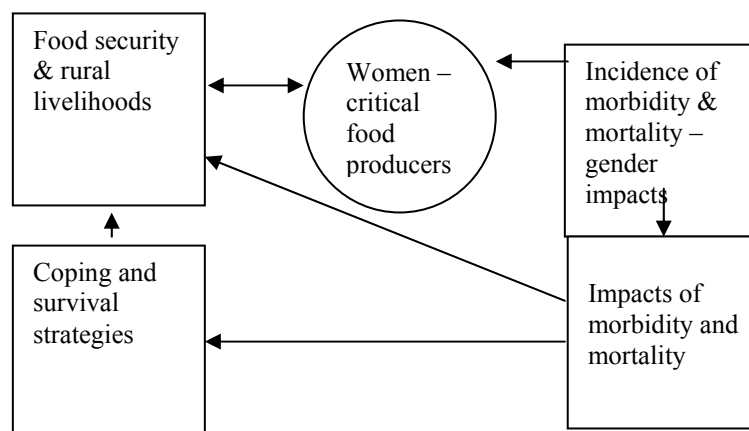
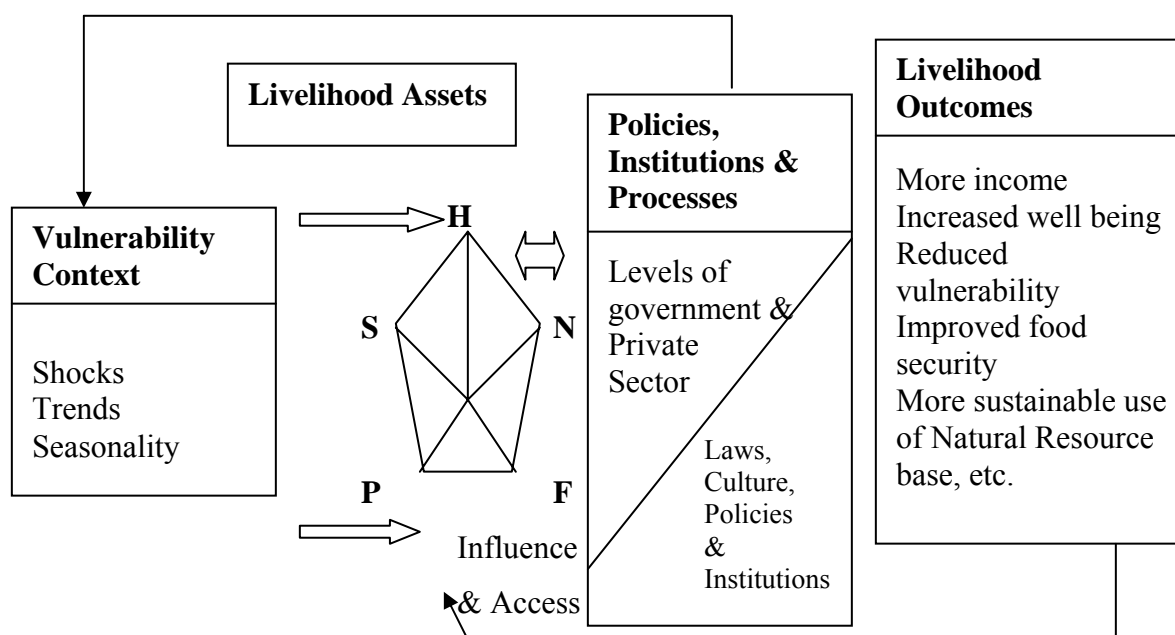


Figure 2.5 Interrelationships between women, morbidity and mortality, coping strategies and food security.

The framework illustrated in Figure 2.5 can be viewed fully and in inter-relationship with the five types of capital in Figure 2.6.



KEY: H= Human capital, N= Natural capital, F= Financial capital, S= Social capital and P= Physical capital.

Figure 2.6 Sustainable livelihoods analysis framework (DFID, 1998: 5).

Figure 2.6 is a standard linear representation of the DFID sustainable livelihoods framework. However, the relationships are not just linear, but complex and integrated. The arrows within the framework are used to denote a variety of different types of relationships, all of which are highly dynamic. None of the arrows imply direct causality, though a certain level of influence is implied. The sustainable livelihoods approach is demonstrated to provide a delimited set of capital assets likely to be affected by morbidity and mortality. In order to gain an insight into the concept of sustainable livelihoods, relevant concepts in the framework are briefly examined in this section. These include resources and assets, livelihood strategies, livelihood outcomes and vulnerability. Resources and assets are a means to achieve livelihood security and vary in kind and potential for meeting complex and unique needs of individual members (Deacon and Firebaugh, 1988). In the framework of sustainable livelihoods, assets include social capital, human capital, physical capital, natural capital and financial capital (DFID, 2002; Ellis, 1999; DFID, 1998).

Du Toit and Ziervogel (2004) asserted that many coping strategies were determined by the access that individuals and households have to a range of resources, including information, money, food, natural resources and employment opportunities. These are negotiated through the social capital of livelihoods that determine who has access to what resources and information. Thus, social capital can be defined as the social networks and associations to which people belong (DFID, 2002; Ellis, 1999). Social capital refers to quality of relations among people, for example whether one can count on family support or mutual assistance among neighbours. Social capital is also defined as the benefit of membership of a network support. Narayan et al. (1999) and May (1998) argued that social capital was a two-way process because social networks provide benefits such as access to scarce resources and that membership entails having claims and entitlements made upon household resources. Social networks are important, in particular for rural women, for mitigating uncertainties such as a vulnerable financial situation, food insecurity, illness, and death. Robb (1998) noted that in some communities, a time of crisis may result in strengthened social cohesion and may even generate new relations that improve overall social capital as poor communities find resourceful ways of overcoming their problems. Social networks provide opportunity for households to access resources and assets and are therefore an important critical claiming strategy for mutual support and survival (Conway and Chambers, 1992)

Human capital comprises health, education and labour of household members (Ellis, 1999; Narayan et al., 1999). It is the sum total of human resources, all capabilities and traits that people use to achieve goals and other resources. Human resources include skills, talents, abilities, knowledge, health, feelings and caring (Ellis, 1999). Health is another important human capital. Good health is an important asset because most rural people rely on physical labour for income and food production. Illness and death cause a severe drain on household resources and affect the economic stability of the household (Narayan et al., 1999). This is particularly relevant in view of the HIV/AIDS epidemic in South Africa. The ability of households to manage labour assets to take advantage of opportunities for economic activity is constrained by the levels of education and skills, the health status of household members and by demands of household maintenance (Carney, 1998).

Natural capital is the natural environment that provides a number of assets that can be converted to resources such as air, rain, water, land, rivers, forests, wild plants and animals. The concept of nature as a resource implies that nature is primarily conceived of as a means of production, a good for consumption and a pre-condition for human health (van Koppen, 2000: 300-318). Nature as a resource provides material needs for food production, living space, health conditions and supply of energy and livelihood materials. However, the natural environmental conditions can also be a critical source of vulnerability for rural communities. In KwaZulu-Natal, the majority of rural households are found in the steep slopes and rugged terrain of the province (van Koppen, 2000: 300-318). Such terrain is unsuitable for agriculture and inhibits construction of infrastructural services needed to provide basic services for enhancing rural livelihood security.

Physical capital comprises assets that are human made and include infrastructure such as road networks, electricity, clinics and hospitals, schools and churches. These assets are provided as community resources. At the household level, physical assets that can be converted into resources are land, agricultural equipment, household and other productive equipment, housing and other personal or household property (Narayan et al., 1999; May, 1995). It is documented that poor people often choose to retain few scarce assets during times of food insecurity, illness or death (Narayan et al., 1999). This implies that access to physical capital is an essential element of strategies to reduce livelihood insecurity.

Financial capital is an important asset in sustainable livelihoods. Financial capital includes money, credit, stock and assets that can be converted to cash (Ellis, 1999; May et al., 2000). Generally, rural households in South Africa have low incomes and spend a large portion of income on food, thus the percentage of households (population) with savings is very low at 14.1 percent, and the savings rate is approximately 20 percent (May et al., 2000). Lack of useful and credible financial institutions in rural areas of KwaZulu-Natal could also contribute to the low percentage of households that save money (May et al., 2000). The financial resources available to people provide them with different livelihood options (Carney, 1998).

Rural people in South Africa undertake various activities that yield food, shelter, clothing and income to buy goods and services. Goldman et al. (2000) assert that the key to empowering rural households is to broaden the range of strategy options through diversification of livelihood choices as diversification reduces vulnerability through widening choice.

Zoomers (1999) designed four typologies of livelihood strategies, namely: accumulation strategies that involve an establishment of a minimum resource base guided by a long-term strategic view of future income sources; consolidation strategies that invest in establishing the well being of households and improving the quality of life; compensatory and survival (coping) strategies and; security and risk-reducing strategies. Livelihood strategies are contextual and depend largely on the objectives and priorities of households. Furthermore, livelihood strategies are multi-dimensional as one strategy cannot serve all the objectives at the same time.

Carter and May (1997) identified a number of activities that rural households in South Africa use to generate income, namely: agriculture for own consumption and income; small and micro enterprise activities such as hawking and handicrafts; wage labour; claiming against the state for state pensions and disability grants and remittances from migrant workers. Other activities distinguished by Carter and May (1997) that contributed to livelihood strategies included: unpaid domestic labour, largely performed by women and illegitimate activities such as sex work.

Diversification of livelihoods is an important component of rural livelihood security. In southern Africa, 80-90 percent of households rely on non-farm income sources (Ellis, 1999).

Diversification contributes positively to livelihood sustainability as it reduces proneness to stress and shocks. However, the positive contribution of livelihood strategies depends on whether the strategies employed are erosive or not.

Farrington et al. (1999) identified positive livelihood outcomes as: more income, increased well being, reduced vulnerability, improved food security and more sustainable use of natural resource base. Chambers (1989) defined vulnerability as defencelessness, insecurity and exposure to risks, shocks and stress. In the context of vulnerability, households work out coping strategies to respond to shocks and stresses.

From the discussion of coping strategies and sustainable livelihoods as the framework of the study, the distinction between coping strategies and livelihood strategies can be noted. Coping strategies respond to adverse situations (reactive mode) while livelihood strategies are proactive approaches to securing adequate assets and resources to meet basic household needs. The difference between the two is crucial for determining whether community gardens in the Maphephetheni uplands were a coping strategy, a livelihood strategy or both.

2.13 Summary

The literature review has shown that morbidity and mortality have negative effects on rural household subsistence agriculture-based livelihoods. The various studies discussed here confirm the impact of morbidity and mortality on coping strategies and rural livelihoods in general, especially the depletion of strong, capable and productive farm labour, and the loss of agricultural capital to pay for medical and funeral expenses. In the wake of HIV/AIDS, it is likely that households would find it difficult to cope with compounded shocks and stresses such as food insecurity, morbidity and mortality.

The literature review has also identified a variety of coping strategies practised by rural households to mitigate the impact of morbidity and mortality on food and livelihood insecurity. Some coping strategies render households and particularly women insecure, susceptible to HIV infection, and vulnerable to AIDS and as a result lead to increased morbidity and mortality. Such

strategies are categorised as erosive. A distinction between livelihood strategies and coping strategies was briefly presented. This was important in establishing whether community gardens in the Maphephetheni uplands were a livelihood strategy, coping strategy or both, one of the focal areas in chapter five of this study.

Review of literature has also acknowledged that women carry an unequal burden in terms of poor health and mortality because they are highly susceptible to HIV infection and vulnerable to AIDS. This means that HIV/AIDS epidemic is not gender neutral. In addition, women suffer a triple threat as far as HIV impacts are concerned. AIDS has increased women's work load because of the demands for domestic work, care giving and farm duties. All this has serious implications for coping strategies and livelihood security.

CHAPTER 3: CHARACTERISTICS OF THE STUDY AREA

This chapter discusses the study area. It gives a brief overview of South Africa and the province of KwaZulu-Natal, and describes the Maphephetheni area. Finally, descriptive statistics of community garden club members and their households are presented.

3.1 An overview of South Africa

The World Bank (2000) categorised South Africa as a middle income developing country with a *per capita* income similar to Brazil or Malaysia, but ranks lower than these countries in terms of its Human Development Index (HDI). This is due to the grossly unequal distribution of income, wealth, opportunities and services. Next to Brazil, South Africa has the second most unequal distribution of income in the world where the experience of the majority of South African households is either one of outright poverty or of continued vulnerability to becoming poor or poorer (World Bank, 2000).

More than 9 million South Africans were estimated to exist below the international poverty line of one United States dollar per day in 1997 (World Bank, 1997). Furthermore, the World Bank (1997) noted that income inequality was extreme and the variation in poverty rates and human development indices (HDIs) between provinces and racial groups remained high. Fifty percent of the South African population were defined as poor using a South African poverty line equivalent of US \$2.40 per person per day which was R354 per person per month (Woolard & Leibbrandt, 1999: 11). Poverty is mainly rural, 72 percent of the poor live in rural areas, and 71 percent of the rural population are poor. Sixty percent of female-headed households are poor. Poverty is severest in provinces containing the former homelands. Women are particularly vulnerable to poverty (World Bank, 2000).

3.2 A brief description of KwaZulu-Natal

KwaZulu-Natal is one of the nine provinces situated in south-eastern South Africa. The economy of KwaZulu-Natal centres on agriculture (Edgar, 2000; Government Communications Infonautics

Corporation (GCIC), 2000). According to the food security working group (FSWG) (1997), the topography of KwaZulu-Natal contributes to the impoverishment of the region because of its characteristically steep slopes and rugged terrain that restricts land use for growing crops

Schwabe et al. (1996) noted that 57 percent of households in KwaZulu-Natal lived in income poverty and the province ranked third out of nine provinces. It is also documented that the poorest districts in KwaZulu-Natal are in former KwaZulu homeland areas that are remote and rural (Schwabe et al., 1996).

3.3 Description of the study area: an overview of Maphephetheni

This study, on the impact of morbidity and mortality on women's coping strategies, was conducted in rural areas known as Maphephetheni of KwaZulu-Natal. Maphephetheni is also referred to as Maphephethe which means "land where the sun rises". It is located in a picturesque hilly area known as the "Valley of a Thousand Hills" approximately 80 km west of Durban (KwaZulu-Natal), and falls within the Ndwedwe Magisterial District and Ilembe Regional Council. The terrain is very mountainous and characterised by dispersed settlement patterns. Maphephetheni is bordered by the Mqeka River to the west and Inanda Dam to the south while the mountainous Pisweni and Matatam plateaus are on the northern and eastern section of the village. Two distinct areas can be identified within Maphephetheni, commonly referred to as the uplands and lowlands (figure 3.1). Each has different geographic and socio-economic characteristics. The uplands are characterised by more subsistence farming than in the lowlands. The lowlands are on the southern side of the escarpment adjacent to Inanda dam and are better off in terms of income generation than the Maphephetheni uplands (Green et al., 2000: 19-30).

The Maphephetheni uplands were selected for this study for three reasons. First, Maphephetheni is a rural area and its people are involved with subsistence agricultural production. The Maphephetheni uplands have high agricultural potential (Johnson et al., 1991) but relatively low yields due to lack of income to access agricultural inputs, making it a prime area for investigating the effects of morbidity and mortality on women's coping strategies because a farm-household system which is vulnerable from an agricultural perspective is also a fertile ground for the spread

of HIV which in turn leads to morbidity and mortality (du Guerny, 2002). Second, the area is situated in KwaZulu-Natal where there is a relatively high incidence of HIV/AIDS (Whiteside, 2001: 1-5). Third, the Maphephetheni uplands is an impoverished community when compared to the Maphephetheni lowlands (Green et al., 2000: 19-30).



Figure 3.1 Location of Maphephetheni (Braby, undated).

Maphephetheni is presided over by a traditional leader, chief Gwala and a local representative council. Chief Gwala, like other tribal chiefs in rural settings of South Africa, wields considerable influence over local institutions such as tribal courts, land tenure and allocation of land rights. Local governance is vested with tribal authority, headed by a local chief assisted by local councillors. Prior to the 1994 change of governance in South Africa, tribal chiefs appointed

community leaders or headsmen (*indunas*) who performed specific tasks at the request of the chief. Since 1994, some *indunas* have largely been replaced by community elected councillors. These councillors represent the community at the next level of government, namely District Committees of District Councils (Ministry for Constitutional Affairs and Constitutional Development (MCACD) (1998).

There were an estimated 1000 households in 1998 in the area as counted from a Geographic Information Systems (GIS) map (Green and Erskine, 1999: 221-223; Green & Erskine, 1998). Green and Erskine (1999: 221-223 & 1998) found that the average household size was 10 people and so the estimated population of Maphephetheni was approximately 10,000 people. Each homestead consisted of an average of four dwellings, typically housing extended family members (Green & Erskine, 1998). Another study (Green et al., 2000: 19-30) found that the overall population was estimated at 16000 people spread over 2000 homesteads in 2000. This means that an average of eight persons resided per household in 2000. Subsistence agriculture and small scale informal economic activities are the main socio-economic activities in the area. Community vegetable gardens are a major activity in Maphephetheni. Community gardens are often used for growing a variety of vegetables. These vegetables include *amadumbe* (*taro*), beans, beetroot, cabbage, carrots, green pepper, onion, and spinach. Communal land is used for grazing livestock.

The roads in the Maphephetheni uplands are of poorer quality than in the lowlands. The roads in the uplands have gravel surfaces. Road infrastructure is poor and housing is generally informal. There is no clinic except a mobile clinic in the Maphephetheni uplands that attends to medical needs of the community once a week, while in the lowlands, a clinic has opened near the court house and nurses are stationed there permanently.

3.4 Descriptive statistics

This section presents descriptive statistics with regard to garden club members and their households in the Maphephetheni uplands as researched in 2003 and 2004. Most of the descriptive statistics presented in this chapter relate to 2003, the start of the study and baseline for comparisons in chapter seven of this study.

3.4.1 Garden club members

This study defines a community garden club or garden club as a group of women in the Maphephetheni uplands who work together on a piece of land where each person grows crops for own household consumption and basic income. Garden club members were those that voluntarily participated in community gardening who comprised of women only. Men were reported as not interested in undertaking community gardening activities. The terms garden club members or community garden club (group) members, respondents and participants are used interchangeably in this study.

The number of participating members per garden club ranged from two to thirteen and three to fourteen in 2003 and 2004, respectively. The average number of participants in this study was six members per garden club. Figure 3.2 shows the number of participating members per garden club in the first two years of field research. In 2003, there were 79 garden club members who participated in the study while in 2004, the number of garden club members dropped to 73. The garden club members who participated in the study also represented their households.

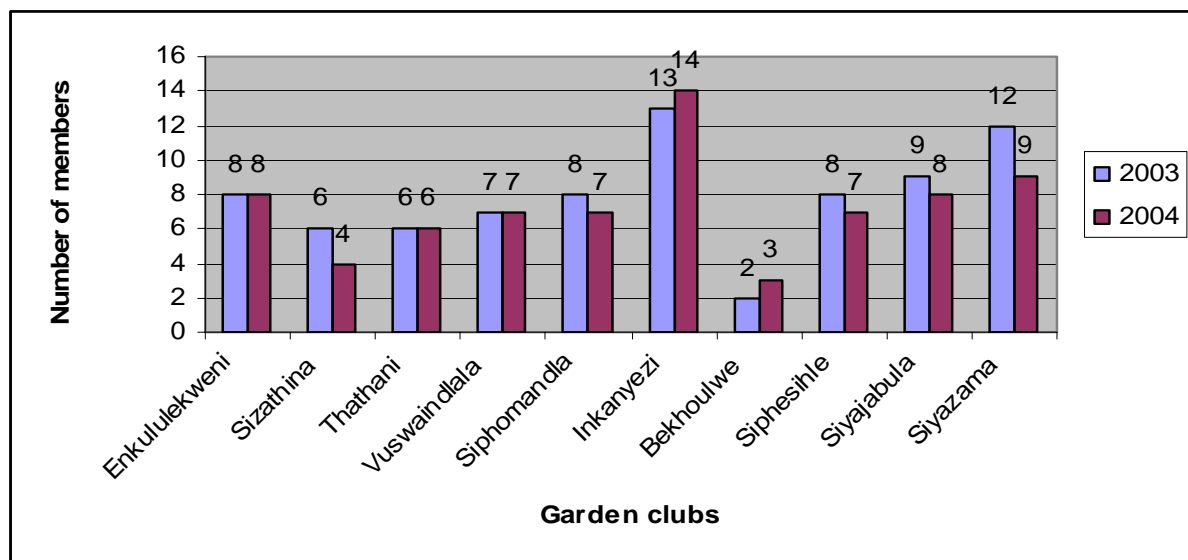


Figure 3.2 Number of respondents per garden club for 2003 (n = 79) and 2004 (n = 73).

All participants were female with a few exceptional cases of men who participated in round one and answered the questions for their wives or female household members and not for themselves. The participants ranged in age from 24 to 83 years. The average age of garden club members was 51. Table 3.1 indicates the levels of education of participating members.

Only one of the 79 garden club members had a post school qualification, 1.3 percent of the sample had achieved grade 12, grade 11 and grade 10 qualifications each. Ten percent of the garden club members (participants) attained grade eight qualifications while another 10 percent had attained grade seven. About six percent of the members attained grade 6 and grade 4 qualifications each while almost 4 percent of the members attained grade 5 and grade 3 qualifications each. Only 2.5 of the members obtained grade 2 and grade 1 qualifications each. Table 3.1 also shows that approximately 44 percent of the members received no formal education. This means that the illiteracy levels among the participants were high.

Table 3.1 Education level of respondents in 2003 (n = 79)

Educational level	Frequency	Percent of sample
No formal education	35	44.3
Grade 1	2	2.5
Grade 2	2	2.5
Grade 3	3	3.8
Grade 4	5	6.3
Grade 5	3	3.8
Grade 6	5	6.3
Grade 7	8	10.1
Grade 8	8	10.1
Grade 9	4	5.1
Grade 10	1	1.3
Grade 11	1	1.3
Grade 12	1	1.3
Year 2 of tertiary education	1	1.3
Total	79	100.0

The average total monthly income per garden club member varied but in 2003, the monthly income contribution towards households averaged R252 per month (SD \pm 597.62) per garden club member where 38 percent of garden club members did not disclose their income. The

picture was relatively different in the second round of interviews in 2004 when 22.4 percent of garden club members did not disclose contribution to monthly household income while 40.8 percent reported a monthly contribution of R740 to household income (this is likely to have been state pensions). The mean monthly contribution to household income among garden club members was R602.00 (SD \pm 895.03). The decrease in the number of members that did not disclose contribution of income to their households and the increase in the number of people who reported monthly income could be attributed to finding it difficult to disclose how much they contributed in terms of income in the first round and increased levels of trust in subsequent surveys. These findings generally show that garden clubs in the Maphephetheni uplands live below the income poverty line and are likely to find it more difficult to cope with the impacts of morbidity and mortality than households or groups with higher incomes. Poswell (2002:14) stated that in South Africa 'high levels of poverty result from low real wages and high unemployment'. Similarly, Bhorat et al., (2001: 216) used an absolute standard of R650 per month per household to measure poverty. This study confirms the findings of other studies which found that households and communities with high morbidity and mortality rates experienced difficulties in coping with the effects and impacts of morbidity and mortality (Bachmann & Booysen, 2003; SADC FANR VAC, 2003; Machethe, 2004; Topouzis, 2002; du Guerny, 2002; UNAIDS, 2004; UNAIDS, 2002; White & Robinson, 2000).

Figure 3.3 shows the levels of income per member in 2004. In addition to farming, many club members also engaged in other occupations to supplement their agriculture-based livelihoods.

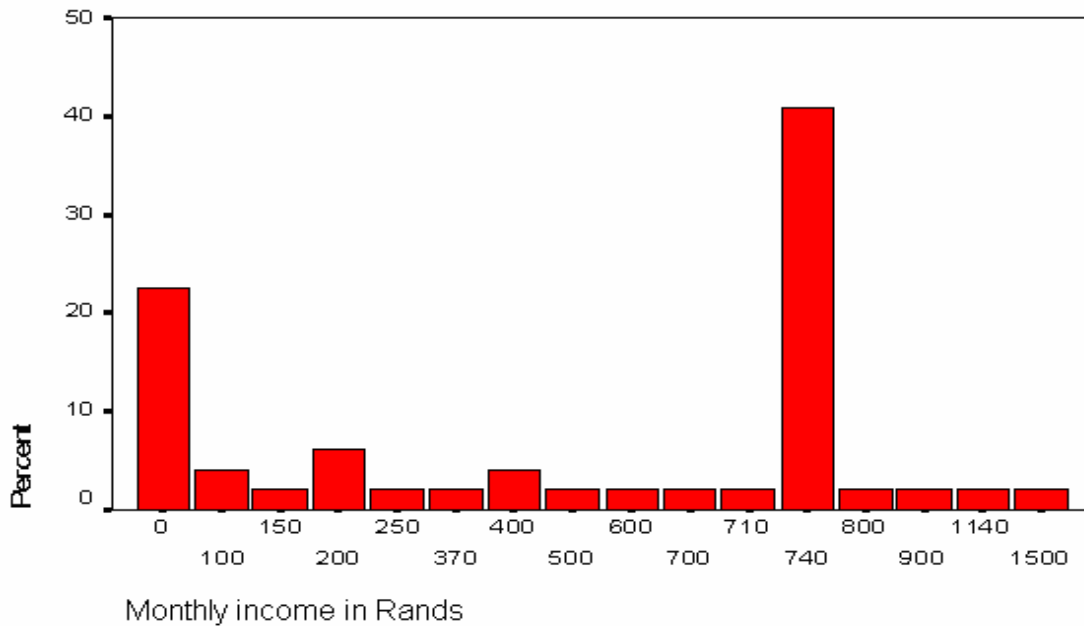


Figure 3.3 Monthly income contribution to households by garden club members in 2004 (n = 73).

Community gardening (subsistence agriculture) and small scale informal economic activities were the main economic activities in the area. Some garden club members were also involved in home gardens. No participants were engaged in commercial agriculture.

3.4.2 Household members

Household members are defined in this study as members of those households to which garden club members belonged. Household members also included (in holistic terms) garden club members. When analysis is presented of household members, it should be born in mind that such analysis is inclusive of garden club members. Household demographic data were collected from each participating garden club member. The 79 garden club members represented 79 households and 598 household members in 2003. Community garden club households refer to those households that garden club members and other members of the household belong. Household size ranged from two to sixteen with a mode of eight members in 2003 and 2004. The average household size was eight members per household in 2003 which increased to nine members per household in 2004. The increase in household size was due to new births and additional members.

The total average monthly income per household member was R111.22 in 2003 while in 2004 the total monthly income per household member averaged R168.00. The total mean monthly income per household member increased to R716.09 in 2005. These variations show that collecting household income data is difficult. Each year garden club members (respondents) were more willing to disclose household income to the researcher and research assistants. Income data is therefore not reliable.

Education levels of adult household members in the Maphephetheni uplands were low. Figure 3.4 shows that almost 17 percent of adult household members (15-85 years old) had not received any formal education. Almost 15 percent of the adult population had attained grade 12 education in the Maphephetheni uplands in 2003. Figure 3.4 indicates that less than one percent of the adult household members received tertiary education.

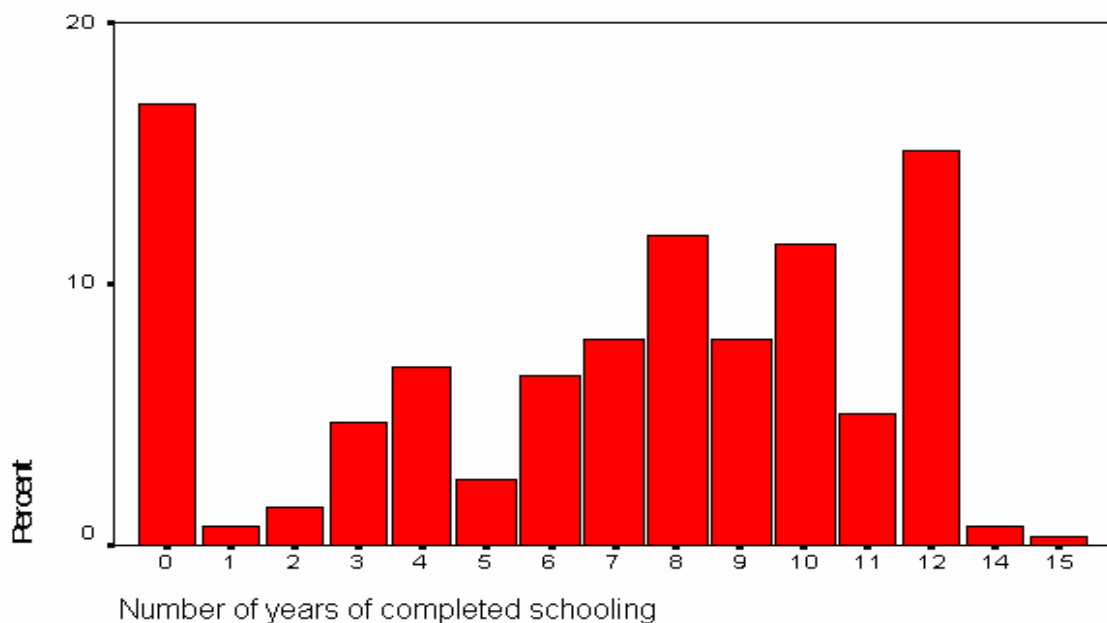


Figure 3.4 Percentage of educational attainment among adult household members (15-85 years old) in 2003 (n = 598).

People in the Maphephetheni uplands engaged in different activities. Table 3.2 gives the types of occupational activities in which members (both garden and household) were engaged in the Maphephetheni uplands. The table reveals that 15 percent of the 598 household members were unemployed, but seeking salaried employment. In the Maphephetheni uplands, 38.8 percent of

the 598 household members in 2003 were scholars while only 10 percent were wage employed and 13.8 percent were engaged in subsistence vegetable farming (table 3.2). Table 3.2 also reveals that five percent of the 598 household members were pensioners while approximately three percent were self-employed in income generating activities such as shop-keeping and block making.

In addition, approximately 84 percent of 598 household members in the Maphephetheni uplands were residents and 10.8 percent accounted for migrants in the 2003 survey. The migrating household members usually went to Durban and other cities in search of wage or salaried employment.

Table 3.2 Occupations of household members in the uplands area, 2003 (n = 598)

Type of occupation	Frequency	Percent of sample
Disabled	7	1.6
Farmer	61	13.8
Housekeeper	1	.2
Infant or child (0-6 years)	54	12.2
Pensioner	22	5.0
Scholar	171	38.8
Self employed (e.g. taxi operator, shopkeeper)	12	2.7
Unemployed but seeking work	66	15.0
Vagrant	3	.7
Wage employed	44	10.0
Total	441	100.0
Missing	157	
TOTAL	598	

In summary, the chapter described some of the characteristics of the study area. An overview of the Maphephetheni uplands was given in terms of geographic and political settings. Then, specific features of garden club and household members were presented. Overall, the Maphephetheni uplands has high potential for agriculture despite being mountainous and impoverished (Green et al., 2000). The position of women could be compromised by the impact of morbidity and mortality, the focus of this study. Therefore, choice of methodology took account of human complexities and vulnerabilities. Sustainable livelihoods analysis methodologies and other qualitative and quantitative methodologies were found suitable as discussed in detail in the next chapter.

CHAPTER 4: STUDY METHODOLOGY

This chapter describes how data was collected and analysed. Issues concerning illness and death are generally sensitive topics to discuss. This is particularly so in the case of HIV/AIDS, which is still highly stigmatised in South Africa. The stigma associated with the disease renders people unwilling to discuss or give AIDS-related information, particularly about household members. Therefore, it was decided to focus this study on morbidity and mortality. Although the original aim of the study was to measure and investigate the impact of HIV/AIDS, it was not possible to know accurately who was infected with HIV without testing.

Furthermore, research on HIV/AIDS raises ethical concerns because research participants accept risks and inconvenience primarily to advance scientific knowledge and to benefit others. Although some research offers the prospect of direct benefit to research participants, most research does not (Beauchamp and Childress, 1994). Wolf and Lo (2000) noted that there were three widely recognised principles that applied to research in HIV/AIDS: respect for persons, beneficence and justice. Respect for persons entails respecting the decision of autonomous persons and protecting persons who lack decision-making capacity. Beneficence imposes a positive obligation to act in the best interests of the research participants while justice requires that people be treated fairly. Wolf and Lo (2000) and Beauchamp and Childress (1994) stated that the principles of respect, beneficence and justice provided an appropriate ethical framework in conducting HIV/AIDS related research. Similarly, the South African Department of Health (2000) noted that research on HIV/AIDS topics involved complex ethical challenges such as: an informed consent, confidentiality, autonomy of participants, access to HIV related medication and the release and publication of research findings. For example, informed consent may be difficult to achieve, especially when engaging people from disadvantaged and vulnerable communities where literacy and education opportunities are inadequate (Department of Health, 2000). Nevertheless, every effort needs to be carried out to obtain informed consent. Thus the many tensions, dilemmas and ethical considerations surrounding HIV/AIDS research necessitate a wide consultative process. Due to inadequate financial resources and technical expertise required, it was decided to focus this study on morbidity and mortality.

It is also to be noted that a language barrier existed between the researcher and the community garden club participants. This necessitated the use of isiZulu speaking post graduate research assistants. Use of a questionnaire with standardised responses controlled for this, but restricted the dialogue between the community garden club participants and the researcher. Nevertheless, the researcher relied on direct observation and interpretation to draw insight into the participants' responses.

This study contributes to understanding the impact of morbidity and mortality on women's coping strategies within the context of rural women engaged in subsistence agriculture-based livelihoods. The focus was on how women participating in subsistence agriculture coped with potentially HIV/AIDS-related shocks and stresses. There was a need to explore and investigate the impacts of morbidity and mortality upon women's coping strategies given the lack of research on South African coping strategies. This was important to ensure a better understanding of the impact of illness and death and means for assisting households cope with the effects of increasing health and funeral costs while protecting livelihoods in the wake of low incomes and reduced household labour potential (Hendriks & Kiamba, 2003). This chapter gives details of how the research was conducted. Chapter four discusses sample selection, an innovative mix of qualitative and quantitative approaches used and the coping strategies index method. Finally, this chapter closes by presenting data analysis tools applied in the study.

An innovative mix of research methodologies identified recognised and accommodated the complex nature under which women's coping strategies were practised within the context of rural households in the Maphetheni uplands. Eckman (1999), in investigating issues of the rural poor, pointed out that it is important to recognise that the poor cannot be studied in isolation, because of the complexities of people's lives. Therefore, a group sustainable livelihoods analysis approach was considered a feasible alternative to understanding human complexities. For a comprehensive and holistic investigation of the impact of morbidity and mortality on women's coping strategies, qualitative sustainable livelihoods analysis was complemented by quantitative methodologies to ensure validity and credibility of this study (Sproull, 1995).

The qualitative research methodologies employed group sustainable livelihoods analyses using participatory rural appraisal tools, namely: a seasonality calendar, ranking and scoring. Leedy (1997) conceded that such methodologies were particularly effective where the concerns involve human beings, interpersonal relationships, personal values, meaning, beliefs, thoughts and feelings. Qualitative methods assist in attaining rich, real, deep and valid data from a rational stand-point about illness and death (Thompson and Metz, 1997).

A semi-structured household survey was also employed that collected information regarding household composition, community garden tasks which included ploughing, planting, weeding, watering and harvesting, personal condition of health (morbidity status), and household members' cost of illness, funeral costs and demographic variables such as age, gender, income and household size.

4.1 Sample selection

The study participants were 79 garden club members (representing 79 households and 598 household members) from ten community gardens in the Maphephetheni uplands, a relatively homogenous geographic area. The ten community gardens were Bhekokulwe, Enkululekweni, Enkanyezi, Siphamandla, Siphesihle, Siyjabula, Siyazama, Sizathina, Thathani and Vuswaindlala. These community gardens were far apart from each other and members walked long distances of about 5 to 7 km to get to their gardens. Each woman (garden club member) was allocated a plot of land and tended this in the community garden. All garden club members who attended the initial workshops were included in the study. Appendix A shows a sample of the interview schedule used. Prior to conducting the study, key people such as *Inkosi* Gwala and local councillors were contacted and consulted for approval to carry out the study. A meeting of the chief, local councillors and research assistants was held at the court house to gain a better understanding of the Maphephetheni uplands situation.

4.2 Garden club sustainable livelihoods analyses

An interactive process of participatory inquiry at the garden club level was conducted. A group livelihoods analysis was conducted with each of the 10 community garden clubs in the Maphephetheni uplands. Community garden clubs were comprised of women. The study participants were therefore mostly women with a few exceptions where men participated and answered on behalf of their wives during the 2003 round. Seventy nine garden club members (representing 79 households and 598 household members) participated in the sustainable livelihoods analysis in 2003 and slightly fewer in 2004 (73 members) and 2005 (68 members).

Garden clubs were asked to draw a typical Maphephetheni uplands household on a flip chart indicating age, name, relationship, occupation, source of income, number of orphans, household members' condition of health, educational levels of members, household size and contribution to household chores as illustrated in Figure 4.1.

Instead of using local classifications of vulnerability as the starting point for discussion, it was decided to explore the diverse nature of households in the Maphephetheni uplands. Rather than beginning with questions about how to identify the most vulnerable households, it was decided to explore what garden club members (participants) considered to be a typical household. This approach was envisaged to make participants comfortable in depicting household-types in picture form and using these pictures to explore complex inter- and intra-household dynamics (Breslin and Delius, 1997). The use of a typical household allowed members to address what resources the household would have and coping strategies that may be applied in a personalised but sufficiently distant manner without disclosing individual or personal information. Sketching was useful for promoting participation, while adhering to the principles of people-centred research and applying a bottom-up approach (Chambers, 1998; Thompson and Metz, 1997; Narayan, 1996).

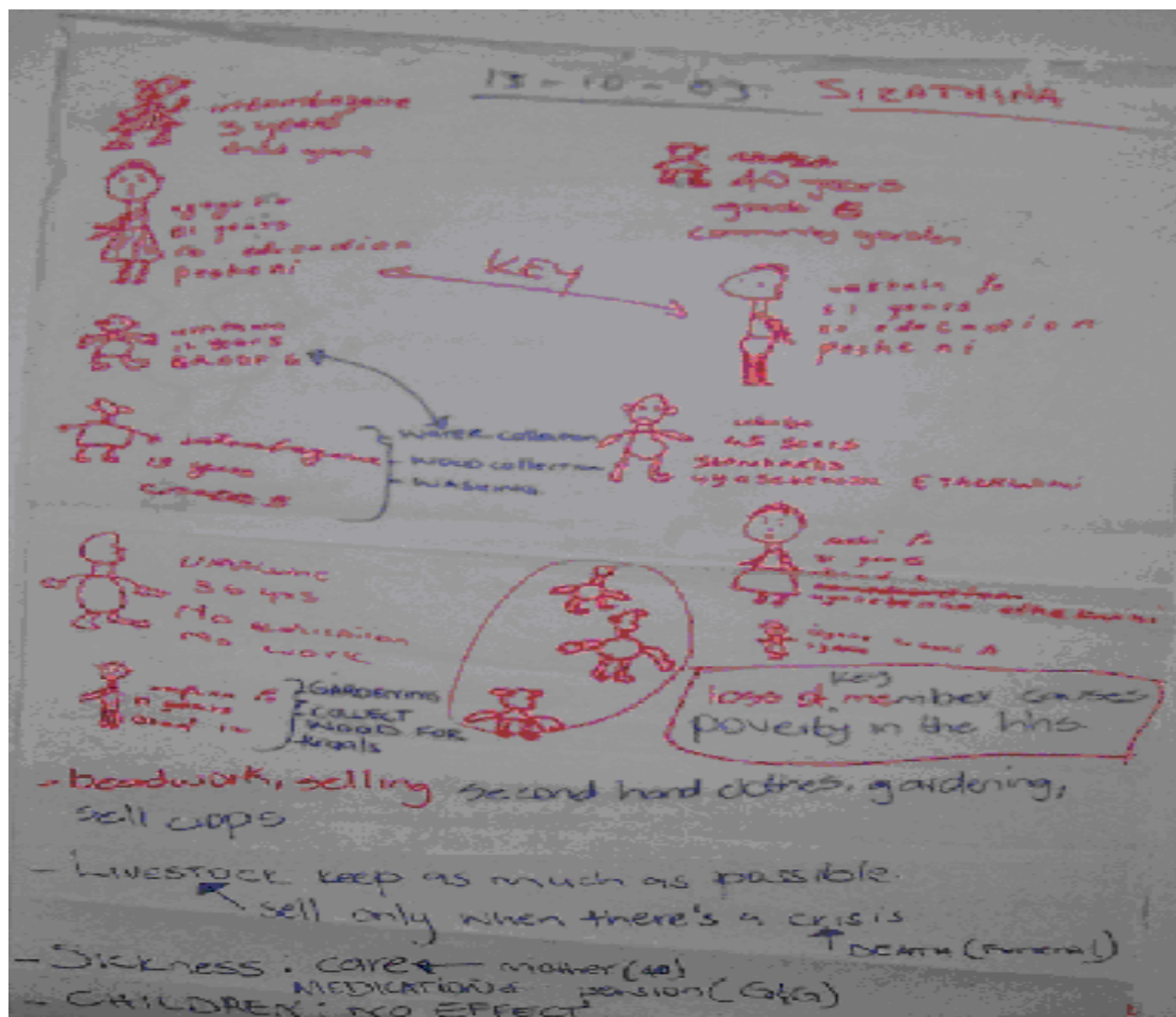


Figure 4.1 An example of a typical Maphephetheni uplands household drawn by Sizathina garden club, 13th October 2003.

Drawing of a typical Maphephetheni household was followed by working with the sustainable livelihoods framework itself as illustrated in Figure 4.2 and Appendix B and Appendix J).

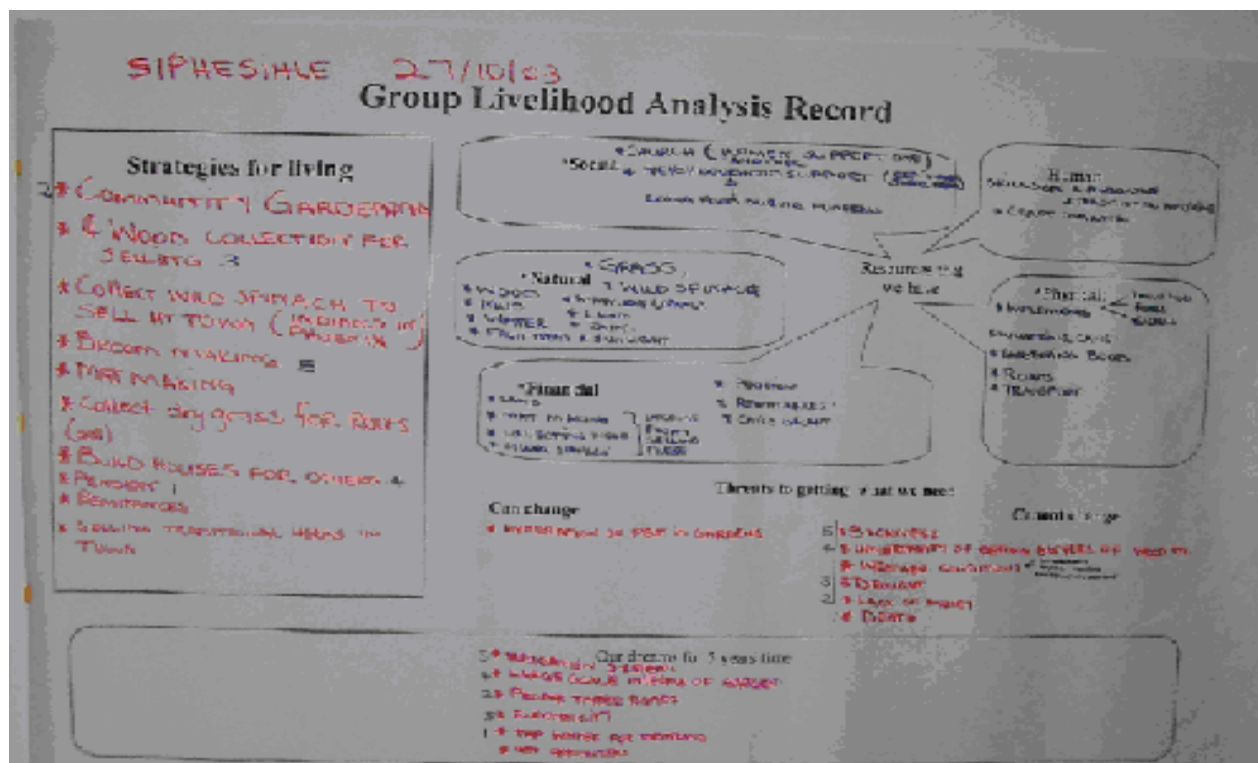


Figure 4.2 An example of a group sustainable livelihoods analysis framework poster prepared by the Siphesihle garden club, 27th October 2003.

Through use of group sustainable livelihoods analyses framework, garden club members provided information regarding: livelihoods assets (human, natural, financial, social and physical), livelihood strategies and outcomes and vulnerability context (threats to their livelihood strategies and outcomes), and their dreams for the next five years for their typical household. Garden clubs were also asked to provide information with regard to coping strategies typically practised by households in the face of illness, death and food insecurity. Sustainable livelihoods analysis posters were prepared by the members (Figure 4.2). In cases where respondents or participants were unable or unwilling to write, research assistants assisted recording the information on posters.

Group preference ranking and scoring techniques were used to record community priorities for future dreams, livelihood outcomes and threats. This method was useful in investigating the relative importance of vulnerability factors to the groups. This method was also particularly important to consider the local-level impact of threats such as illness, death, drought and lack of

water, among others, in the Maphephetheni uplands. Here, garden clubs ranked the livelihood opportunities available on pieces of paper in order of best sustainable options to those with the greatest risk of failure. This exercise helped engage members in identifying joint solutions to problems such as labour constraints due to illness or death.

Using a sustainable livelihoods framework, garden club members were asked to list social assets. Preference ranking and scoring were again used. Preference ranking was useful in demonstrating the relative priority garden club members attributed to social networks and helped to understand the significance of these for particular aspects of livelihoods. Specific food security, illness and death strategies were probed. Scoring and preference ranking were used to reveal the criteria of garden clubs for decision-making about their strategies.

Seasonality charts were used to capture time allocation for different garden activities and the application of coping strategies such as begging and borrowing from neighbours or friends, reducing consumption, eating wild spinach and disposal of their assets in order to buy food. Appendix C shows the seasonality chart that was used for this purpose. Stickers of different colours were used for this exercise. Garden club members placed stickers on the seasonality charts to indicate the times in which they carried out community garden activities and the times in which they experienced levels of food insecurity. An example of a seasonality chart is shown in figure 4.3. Group preferences ranking, scoring techniques and seasonality charts were particularly applied to build rapport with the garden club members, resulting in active participation during the research process. Flip charts with household pictures, seasonality charts and sustainable livelihood analysis framework posters were used on subsequent visits to be used as points of discussion.

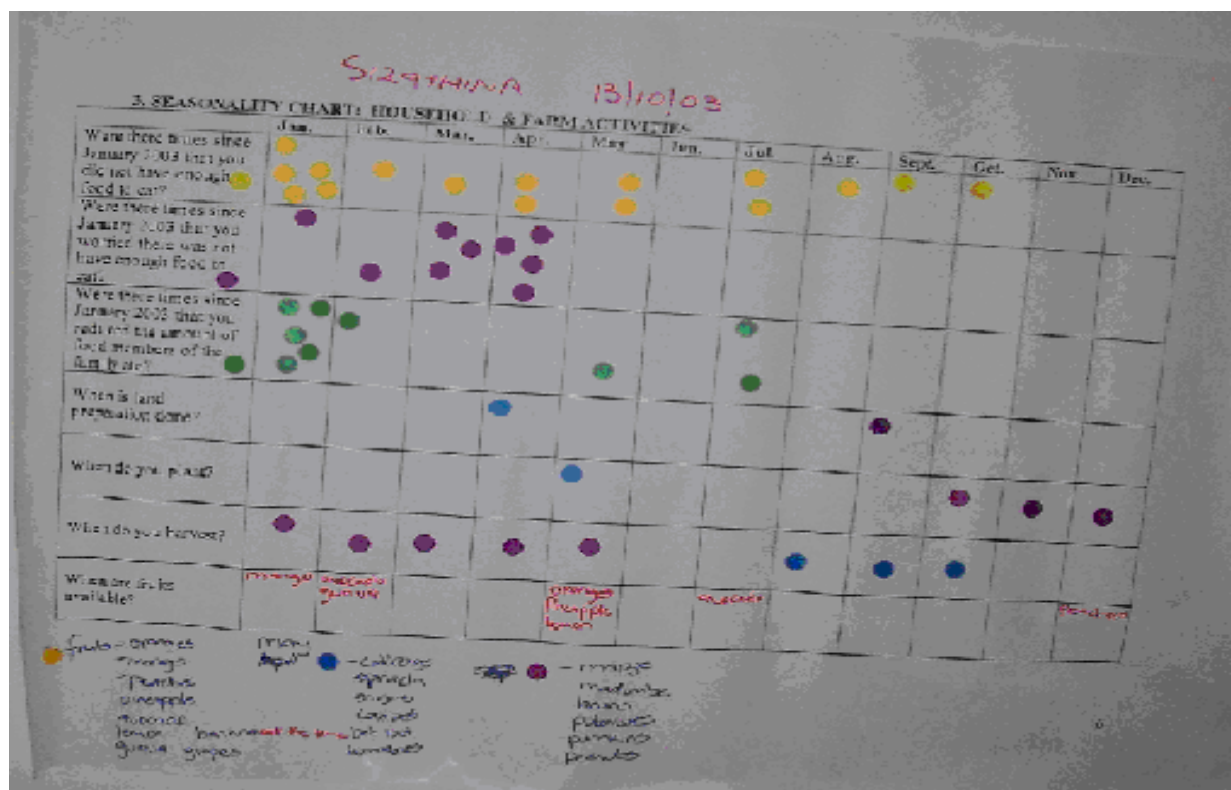


Figure 4.3 An example of a seasonality chart prepared by the Sizathina garden club, 13th October 2003.

General group discussions described patterns of livelihood activities such as ploughing, crop planting, harvesting schedules, fruit availability, levels of food (in)security in the Maphephetheni uplands and provided interpretations of reasons for possible changes in livelihood strategies. Group sustainable livelihoods analyses were followed by general group questions that sought to elicit qualitative information with regard to whether and how sickness and death affected community gardening and income generating activities at both household and community levels; coping strategies; the types of crops grown in the area and; the types of problems related to agricultural production.

4.3 Household surveys

Group sustainable livelihoods analyses were complemented by household surveys. Households that were surveyed were those that community garden club members belonged to. Round one

was conducted in September and October of 2003 while round two in September and October of 2004. And an additional round was undertaken in September and October of 2005. The three surveys collected qualitative and quantitative data. Survey one was a base line for comparison in the subsequent year of field research. Survey three of 2005 specifically focused on the contribution of community gardens to sustainable livelihoods to better understand the impact of morbidity and mortality on coping strategies.

4.3.1 Household survey one

Survey interview questionnaires were devised and work-shopped with research assistants before going into the community. Structured lists of questions were used in interviewing household respondents. This allowed for a mixture of qualitative and quantitative data to be collected. Household surveys were conducted using the same 79 garden club members of the 10 community garden groups at the same time as the sustainable livelihoods analyses.

Survey one generated both qualitative and quantitative data on specific livelihood issues and variables. Variables included types and numbers of illnesses, number of deaths, funeral costs, coping strategies and an audit of assets over the past nine to ten months. Household surveys were used to generate detailed information about the Maphephetheni uplands while minimising resource costs. Survey one was useful for collecting a variety of indicators of human capital to get an indication of the household or individual ability to access labour beyond own direct labour contributions.

The household survey was also used to capture natural and physical assets. Data on natural capital (for example, availability of water) was important to determine vulnerability of their agriculture-based livelihood construct. Key categories of personal or household physical assets included: items that enhance income (for example, cart, bicycles, bakkies or any means of transport, and agricultural implements); house quality and facilities; electricity; personal consumption items (for example, radios, refrigerators, television) which are often good indicators of relative wealth or income poverty. Furthermore, the study investigated household financial assets. Respondents were asked questions with regard to monthly household income

contributions, types of government grants received and goats, cattle, sheep, and poultry owned. The findings for round one are presented in detail in chapter eight of this thesis which discusses the effects of morbidity and mortality on women's coping strategies, particularly community vegetable gardening.

4.3.2 Household survey two and the coping strategy index (CSI) methodology

Survey round two was useful to determine changes and trends at household and community levels that impacted on livelihood issues. Round two sought to investigate changes in household composition, cost of illness, number of sick household members, number of deaths and cost of funerals. Results for round two are presented in detail in chapter seven of this thesis. Similar questions to survey one were used in interviewing the same households. Appendix D shows the list of interview/survey questions for round two.

The coping strategy index (CSI) was added to round two and used to determine the levels or extent of food insecurity (Appendix E for the coping strategies index methodology form). This was useful for understanding how morbidity and mortality could compromise the already vulnerable households in the Maphephetheni uplands. The first step in the design process was to identify and list relevant coping strategies employed among garden club households. Probing was used to find out if coping strategies listed were relevant to their context. Coping strategies that were not relevant to the Maphephetheni uplands were omitted and those that were missing were added to the list by garden club members. Identification of relevant coping strategies was repeated with the 10 groups to ensure that the list of coping strategies reflected a broad opinion. The second step was to ask garden club members to give an indication of how often households employed the coping strategies within one month (table 4.1). Frequency was described in terms of the number of days in an average week over the past 30 days in which a given strategy was used. The question at the top of table 4.1 was repeated for each of the strategies on the list and the appropriate relative frequency was ticked by garden club members.

Table 4.1 Household consumption coping strategies in the Maphephetheni uplands

In the past 30 days, if there have been times when you did not have enough food or money to buy food, how often has your household had to:	Never (percent)	Hardly at all (percent)	Once in a while (percent)	Pretty often (percent)	All the time/everyday (percent)
1. Rely on less preferred and less expensive foods.					
2. Borrow food, or rely on help from a friend or relative.					
3. Buy food on credit					
4. Gather wild food, hunt or harvest immature crops.					
5. Consume seed stock held for the next season.					
6. Send household members to eat elsewhere.					
7. Limit portion size at meal times.					
8. Restrict consumption of adults for small children to eat.					
9. Feed working members of household at the expense of non-working members.					
10. Reduce number of meals in a day.					
11. Skip entire days without eating.					
12. Beg from neighbours or friends.					

Source: CARE & WFP, 2003: 11

The third step was categorising and weighting the coping strategies in terms of severity. This was done by grouping the strategies according to similar levels of severity and assigning weight to each group as illustrated in table 4.2. The coping strategies were rated by four categories of very severe, severe, moderate and least/not severe, represented by numbers 4, 3, 2 and 1, respectively by community garden club members. In the 2004 survey, ten different community groups were consulted about their perceptions of the severity of the various individual coping strategies.

Table 4.2 Consumption coping strategies grouped and ranked by community groups in the Maphephetheni uplands in 2004

AVERAGE SEVERITY SCORE PER GROUP (G = GROUP)

COPING STRATEGY	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	AV.	Consensus Ranking
1. Rely on less preferred and less expensive foods?	1	1	1	2	1	1	1	1	1	1	1.1	1
2. Borrow food, or rely on help from a friend or relative?	2	2	3	1	2	3	2	2	2	1	2.0	2
3. Buy food on credit?	1	2	2	3	2	3	1	2	2	2	2.0	2
4. Gather wild food, hunt or harvest immature crops?	4	4	4	4	4	4	4	4	3	4	3.9	4
5. Consume seed stock held for next season?	4	3	3	4	4	3	2	2	3	4	3.2	3
6. Send household members to eat elsewhere?	2	1	2	2	2	1	3	2	3	3	2.1	2
7. Limit portion size at meal times?	2	1	2	1	1	1	1	1	1	1	1.2	1
8. Restrict consumption of adults in order for small children to eat?	3	4	3	3	2	2	3	1	3	2	2.6	3
9. Feed working members of household at the expense of non-working members?	4	3	2	1	4	2	1	3	3	4	2.7	3
10. Reduce number of meals eaten in a day?	1	1	1	2	1	1	2	1	1	3	1.4	1
11. Skip entire days without eating?	4	4	4	4	3	3	4	4	4	4	3.8	4
12. Beg food from neighbours or relatives?	4	4	1	3	4	2	4	3	2	4	3.1	3

The extreme coping strategies were established by asking the groups to select the most severe and least severe individual strategies first. This allowed grouping the rest of coping strategies into intermediate categories. The fourth step was to combine the frequency and severity of coping strategies for analysis. Information on the frequency of application of these strategies and severity of each coping strategy was combined in a single score, the coping strategy index, which was an indicator of household food security status.

The relative frequency categories were scored according to the average value of the range of each category. Table 4.3 depicts the way numeric values were assigned for relative frequency in the Maphephetheni uplands among the 10 community garden groups.

Table 4.3 Assigning Numeric values for relative frequency

All the time? Everyday	Pretty Often? 3-6 days/week	Once in a while? 1-2 days/week	Hardly at all? < 1 day/week	Never 0 day/week
7	4.5	1.5	0.5	0

Source: CARE & WFP, 2003: 14

4.3.3 Household survey three

Survey three investigated the specific role of subsistence agriculture from community gardens in sustainable livelihoods (Appendix F for the interview schedule). This was useful to determine the extent to which morbidity and mortality have impacted on women's coping strategies, including community vegetable gardening. This survey also investigated whether community gardening was considered to be a livelihood or a coping strategy in the Maphephetheni uplands. Survey three focused on the contribution of subsistence agriculture-based livelihoods to household income, the sources of income and source of food and social capital. The findings of this round are presented in detail in chapter five of the study.

Findings of the study were presented to the 10 community vegetable garden clubs at a special workshop that took place on 14th June 2006. In addition to sharing the findings with the study participants, the workshop aimed to confirm the findings with the study participants. The findings were confirmed to be a true reflection of the situation among the Maphephetheni uplands community garden club members and their households (Appendix G). The same findings were presented to the chief of Maphephetheni and local counsellors on the 21st June 2006 at the court house. The study findings were then translated into Zulu in a form of a booklet (Appendix H) for

use by the garden club members, the chief of Maphephetheni and local counsellors in their development initiatives.

4.4 Data analysis

Survey coded responses (Appendix I) were entered into a Microsoft Excel spreadsheet and reported to the Statistical Package for Social Sciences (SPSS) version 11.5. All data were checked using a variety of analytical Statistical Package for Social Sciences tools. Preliminary data analysis was conducted to establish interrelationships among and between variables. Chi-Square tests were used to determine whether morbidity and mortality had an impact on women's coping strategies. Chi-Square was useful for detecting functional relationships reflected in patterns in the data. A Pearson correlation was also used to determine relationships between variables. Frequency analysis was used to examine trends within frequencies and causes that could have an impact on the interpretation of the findings.

Paired samples t-tests were used to identify significant changes in variables over the first two years of research. This procedure compared the means of variables such as condition of health, number of illnesses, cost of illness, cost of funerals and household size between 2003 and 2004.

The main focus of the study was a qualitative analysis of the impact of morbidity and mortality on coping strategies among the Maphephetheni uplands community vegetable garden women and their households. Through group sustainable livelihoods analyses, garden club members discussed their experiences with regard to morbidity and mortality and how these impacted on food security and rural livelihoods, and ultimately how they coped with illness, death and food insecurity. Thus qualitative data from 10 community garden clubs and personal observation were developed into themes and analysed to support other data.

4.5 Chapter summary

The chapter described a multi-disciplinary and innovative methodological approach involving sustainable livelihoods analysis and household surveys in investigating diverse issues that help

provide an in-depth understanding of the impact of morbidity and mortality on women's coping strategies. Finally, a detailed description of the procedures undertaken with each method was given.

The chapters that follow present the study findings and discussion. Chapter five discusses the role of subsistence agriculture (community gardens) in sustainable livelihoods, which takes adequate consideration of the findings of survey three of 2005. Chapter six examines roles of women (garden club and female household members) in subsistence agriculture and non-farm livelihood activities. This chapter takes adequate account of the findings of survey round one of 2003, the baseline for comparisons in chapter seven. Significant changes and trends over the first two years of field research that impact on agriculture-based livelihoods construct and women's coping strategies at household level are presented in chapter seven. Survey round two was useful in identifying changes in the impact of morbidity and mortality on women's coping strategies. Chapter eight discusses in detail the specific impacts of morbidity and mortality on subsistence agriculture and coping strategies.

CHAPTER 5: CONTRIBUTION OF SUBSISTENCE AGRICULTURE TO RURAL LIVELIHOODS

To determine the extent to which morbidity and mortality impact on women's coping strategies for livelihood insecurity, this chapter examines and discusses the role of community gardens, an activity associated with subsistence agriculture, in improving livelihoods in Maphephetheni. The chapter discusses whether community gardens are a coping strategy while also focusing on why community gardening as a form or an activity associated with subsistence agriculture is potentially an important livelihood activity for the Maphephetheni uplands. To do this, the chapter discusses limiting crop production factors of community gardening in the Maphephetheni uplands. This is useful in understanding the extent of contribution of community gardens to sustainable livelihoods in the Maphephetheni uplands. Furthermore, the contribution of subsistence agriculture-based livelihoods to household income in the Maphephetheni uplands, the non-farm sources of income (livelihood activities/strategies), community gardens and social capital are presented and discussed.

5.1 Constraints of community gardening in the Maphephetheni uplands

In the Maphephetheni uplands, the factors limiting crop production as reported by community vegetable garden club members through group sustainable livelihoods analyses discussion ranged from lack of a training skills centre (infrastructural), lack of adequate labour due to morbidity and mortality, lack of adequate knowledge, skills and experience, soil infertility through to bio-climatic factors such as lack of adequate rainfall, weeds, pests and diseases, and lack of agricultural inputs such as seeds and farm implements. These food production constraints are presented in some detail under the categories of natural capital, human capital, financial, physical and social capital to follow. The main crops grown in the Maphephetheni uplands by community vegetable gardens included: *amadumbe (taro)*, beans, beetroot, cabbage, carrots, green pepper, maize, onion, spinach, sweet potatoes and tomato.

5.1.1 Natural capital

Pests posed a significant problem in community gardens. The most prevalent pests reported and observed were aphids, cutworms, grasshoppers, millipedes and red spider mite. Aphids were particularly prevalent at the seedling stages of cabbage (figure 5.1).



Figure 5.1 A head of cabbage at the Inkanyezi community vegetable garden in the Maphephetheni uplands, 6th October 2004.

In some cases, ash was sprinkled on cabbage seedlings to help prevent aphids since most of the community vegetable garden participants were unable to afford and/or obtain chemical control measures. However, the community garden participants reported that ash did not prove to be a very effective control measure. A number of diseases observed were not reported. The most severe diseases observed were late blight on sweet potatoes and tomatoes, leaf spot on beetroot (figure 5.2), downy mildew on onions (figure 5.2) and viral disease in peppers.



Figure 5.2 Beetroot and onion at Siyajabula community vegetable garden, October 2004.

A localised outbreak of bacterial wilt of potato and tomato was also observed. All the Maphephetheni uplands community gardens were situated along the rivers or water streams (water sources). Due to lack of adequate rainfall, rivers or water sources were dry during early summer. This made it difficult to grow crops. Some soils in the Maphephetheni uplands had the tendency to hard-bake during drier periods, which encouraged rapid run-off and consequent rapid loss of soil moisture. During field research in September and October, there was little rain and the ground was dry and hard following the winter season (figure 5.3).



Figure 5.3 A water source and dry land at Inkanyezi community garden, October 2004.

It was almost impossible to grow crops during this season due to lack of water. Figure 5.3 also shows the dryness of soil and how the *amadumbe* crops were struggling. During this period of the year, temperatures were high. Weeds removed from the gardens were either thrown outside the garden or piled-up within the garden and burnt once dry and the ash used for aphid control on cabbage seedlings or sprinkled onto newly prepared land before planting. Gardens had very few weeds. Weeds occurred along the fence and on fallow plots. Thathani community garden had many fallow plots, so there was a high infestation of weeds. Community gardens in the Maphephetheni uplands used hoeing as the means of weed control.

Community garden clubs reported soil infertility as a challenge to agricultural activities. Analysis of the soils was not done as this was beyond the scope of this study. However, soil erosion was observed and some crops showed signs of nutrient deficiency. None of the gardens used compost heaps as they were considered time consuming and labour demanding. Manure was sometimes used, mainly at planting, although it was considered cumbersome to transport from the kraal to the gardens that were 5-7 km from homesteads. Use of fertilisers was not reported as one of the measures to correct soil infertility, given the impoverished situation of community garden clubs in the Maphephetheni uplands (Green et al., 2000). In this regard, it was speculated by community garden participants that deficiencies that occurred in some of the crops were due to lack of fertiliser. Furthermore, no soil stabilisation practices were undertaken although the gardens were on slopes.

5.1.2 Human capital: under-development of non-farm economy

Community garden club and household members did not have access to training and skills to improve farm and non-farm activities. Some community garden participants reported having skills such as mat weaving, bead work, crochet, sewing, pottery and broom making. The underdevelopment of the craft industry in the Maphephetheni uplands makes it difficult for skills to flourish and as a result the rural household economy was becoming stagnant and people experienced income poverty. Nevertheless, in the second round of household surveys in 2004, some community garden club members participated in newly established projects such as block making (figure 5.4) and water and sanitation projects.



Figure 5.4 A block making project (income generating project) at Siphesihle community garden, 18th October 2004.

Bricks were used for constructing household pit latrines (figure 5.5). The block making project did not only contribute to generation of household income and in turn to household resilience to shocks such as morbidity, mortality and food insecurity, but also created access to social and health services such as hygienic living conditions and good sanitation (beyond the scope of this present study).



Figure 5.5 Community latrine building project, Inkanyezi community garden member's homestead, October 2004.

As important as block making project was, some community garden participants suspended their garden activities due to agricultural labour constraints or competing interests. The consequent

implication is low crop productivity since households preferred to generate income for their household livelihoods through block making project. Some community garden plots were left fallow. Therefore, weeds occurred on fallow plots. Beyond the scope of this study, a legitimate question to ask would be whether income generating activities are a disincentive to agriculture or not.

5.1.3 Financial and physical capital (infrastructure)

In chapter 3 of this study it was mentioned that subsistence agriculture and small scale informal economic activities were the main economic enterprises in the Maphephetheni uplands. The household incomes reported were low at an average total monthly income of R252.00 and R602.00 in 2003 and 2004, respectively amongst garden club members. The average total monthly incomes per household member were R111.22, R168.00 and R716.09 in 2003, 2004 and 2005, respectively. The logical implication for this was that agricultural inputs such as seeds and fertilisers became insufficient and unaffordable due to low incomes although the scale of agriculture was also low. Low income has significant effects on community garden crop production. In addition, poor road infrastructure made it difficult for public transport to be regular. From the group sustainable livelihoods analyses discussion, it was reported that lack of good road infrastructure had adverse implications for vegetable production as community garden club members found it difficult to access the market to buy agricultural inputs such as seeds. Furthermore, some community garden participants reported that their gardens were unfenced and as a result crops were destroyed by cattle and goats. This is a constraint to subsistence agricultural productivity in the Maphephetheni uplands.

5.1.4 Social capital

Community gardens were a form of social capital to members because in times of stresses and shocks such as illness, death and food insecurity, garden club members morally and materially supported one another. Thus community gardens provide a risk aversion strategy. From group sustainable livelihoods analyses discussion, it was reported that not every garden club member was actively engaged in community gardening in the Maphephetheni uplands due to the

constraints or production limiting factors outlined above. Increased absenteeism weakened a sense of community-mindedness (“ubuntu”), networking between community garden clubs/groups and internal functioning of community gardens. But, when the community was faced with livelihood insecurity or shocks such as death, the garden clubs and garden club members morally and materially supported one another.

Having captured some of the agricultural constraints in the Maphephetheni uplands, it is important to present and discuss the specific role of community gardens to sustainable rural livelihoods to better understand the impact of morbidity and mortality on coping strategies amongst women engaged in subsistence agriculture based livelihoods.

5.2 What is the extent of the contribution of subsistence agriculture to rural livelihoods in the Maphephetheni uplands?

The following sections aim to explore the potential of subsistence agriculture for rural communities such as the Maphephetheni uplands. In this study, the specific extent of the contribution of community gardens to sustainable rural livelihoods explores such areas as household income, the non-farm sources of income, and agriculture (community gardens) as a source of food and social capital. Contribution is described in this study as community garden output to household livelihoods in the Maphephetheni uplands.

5.2.1 The contribution of subsistence agriculture-based livelihoods to household income in the Maphephetheni uplands

One way to assess the role of subsistence agriculture or community gardening in improving rural livelihoods is to look at its contribution to household income in the Maphephetheni uplands and number of households dependent on community gardens for food and income. In this study, household income sources were divided into two primary categories of farm and non-farm sources. Farm income included income derived from the sale of produce while non-farm sources included government social security grants, remittances, household commercial enterprises and

other sources. Table 5.1 shows the various household income sources and the average monthly contribution of each to total household income.

Table 5.1 Sources of income and their contribution to total monthly household income among the Maphephetheni uplands community garden households (n = 68), 2005

Income source		Average monthly household income (Rands)	Contribution of income sources to total household income expressed as %
1.	Wages	716.09	41.0
2.	Social grants	714.56	40.9
3.	Home gardens	123.53	7.0
4.	Small scale household commercial enterprises	72.55	4.2
5.	Community gardening	69.46	4.0
6.	Remittances	50.00	2.9
Total		1746.19	100

The third household survey, conducted during September and October of 2005, shows that wages received were the greatest contributor to household income. Forty one percent of total household income was generated from wages. This finding presents a strong case for the second school of thought that recognises the contribution of agriculture but attaches more importance to non-agricultural activities (McIntosh & Vaughan, 1996: 91-118; Gardner, 2005). Social grants were the second most important source of household income with a contribution of 40.9 percent to total household income followed by home gardening contributing seven percent. Here, home gardens are defined as a farming system that combines physical, social and economic functions on the area of land near the family home where home garden diversity includes vegetables and fruit, staple food crops and livestock. In this study, home gardening is also an associated activity of subsistence agriculture. The fourth contributor to household income was small scale household economic enterprises (4.2 percent) followed by community gardening (4.0 percent). In total, community and home gardens contributed 11 percent to total monthly household income. Small scale economic livelihood activities included catering, building and repairing houses, hawking, shop-keeping, domestic work, selling firewood and *muti* (traditional medicine), sewing and craft work.

The study clearly suggests that non-farm income sources as a category contributed more to household income than farming (both community vegetable gardening and home gardening) among the participating households. Eighty nine percent of total household income was from non-farm sources. As time progressed, community garden households in the Maphephetheni uplands engaged in various livelihood activities such as those mentioned above to supplement community garden activities. Community gardens contribute minimally to household income. The above findings need to be understood and interpreted in the context of the period of time at which the household survey was undertaken. Not much crop production was happening at the time since household surveys and group sustainable analyses were conducted during early summer.

Based on May (2000), the mean monthly farming income of households in KwaZulu-Natal fell from R97 in 1993 to R72 in 1998. Although nominal, if this contribution is removed from the total household income, it was noted in the study that the proportion of households involved in agricultural production that were below the poverty line increased from 31 percent to 38 percent in 1993 and from 42 percent to 50 percent in 1998 (May, 2000). This suggests that although income from agricultural production is comparatively modest, agriculture production assisted a significant proportion of households to remain above the poverty line. Nevertheless, these amounts or estimates are lower relative to those from other sub-Saharan African countries (Delgado, 1998), where the farm contribution is usually larger than the non-farm contribution. Specifying small scale economic enterprises and analysing the contribution of the various sources of income to total household income within the same category provided interesting results as illustrated in table 5.2 below.

Table 5.2 Sources of income from small scale commercial enterprises and contribution to total household income in the Maphephetheni uplands (n = 68), 2005

Income source (small scale commercial enterprises)	Average annual income (Rands)	Contribution of small scale commercial enterprises as percent (%) of total annual household income
Shop-keeping	326.56	37.51
Making furniture & handcrafts	248.53	28.55
Selling of <i>muti</i> (traditional medicine)	116.96	13.43
Selling firewood	60.93	7.00
Building and repairing houses	54.41	6.25
Domestic working	31.34	3.60
Sewing	13.24	1.52
Hawking	11.32	1.30
Catering	2.94	0.34
Other/not specified	4.41	0.50
Total	870.64	100

Among small scale economic enterprises, shop-keeping was found to have the greatest contribution to total household income followed by furniture making and handcrafts (37.51 percent and 28.55 percent of the total annual household income, respectively). The income from shop-keeping has been exaggerated in this study by a household that reported an income of R21 600.00 per annum. This affected the average annual income for all households. Similarly, one household reported an income of R15 000 per annum from furniture making and handcrafts. The third most important commercial enterprise and/or income source was sale of *muti* (traditional medicine) with a contribution of more than 13 percent to total household income in the category of commercial enterprises. Sale of firewood and building and repairing of houses accounted for 7 percent and 6.25 percent, respectively while hawking, sewing, domestic work and catering contributed between less than 0.5 and 4 percent. If the two households that reported substantial amounts of R21 600 and R15 000 per annum from shop-keeping and furniture-making/handcrafts are excluded from the above analysis, selling of traditional medicine becomes the greatest contributor to annual household income followed by selling of firewood, 39.57 percent and 20.62 percent, respectively. The third most important commercial enterprise/or income source was building and repairing of houses with a contribution of 18.41 percent while hawking, sewing, domestic work and catering contributed between one and 10.60 percent.

Overall, small scale commercial enterprises contributed on average R870.64 per annum. These results suggest that households in the Maphephetheni uplands diversified their sources of income and/or livelihood activities to supplement agriculture-based livelihoods. This finding is substantiated by other studies by May et al. (2000) and Delgado and Siamwalla (1997) that concluded that typical livelihood strategies in rural South Africa comprise diverse income sources. This means that while agriculture (potentially) plays a role in sustainable rural livelihoods, livelihood insecurity in South Africa cannot be solved by promoting subsistence agricultural growth alone.

More attention should also be accorded to the promotion of non-farm activities, particularly those that are linked to the subsistence agricultural sector. This suggests that a strategy that pays attention to the enhancement of farm and non-farm linkages is likely to yield better results in terms of income generation and sustainable rural livelihoods. Improvement in farm and non-farm livelihood activities entails that households become more resilient to better cope with the impact of morbidity and mortality which reduce labour supply needed to carry out farm and non-farm activities. In this sense, then, community gardening and other activities could possibly play a double role of being a primary basis for livelihoods and a coping strategy. In this perspective, van Zyl and Kirsten (1997) and Sender and Johnston (1996: 3-16) acknowledged that agriculture was one of the most important livelihood strategies for rural households in terms of social capital (a coping strategy) but not necessarily in terms of cash. This means that agriculture-related activities provide the primary basis for livelihoods and social capital in many rural communities. This is explored further in the section that follows.

5.2.2 Subsistence agriculture as a key basis for livelihood strategies (source of food) for the rural poor and a coping strategy

To assess the role of subsistence agriculture, this study also examined the role of community vegetable gardening and home gardens (to some extent) not just as a potentially key basis for livelihood strategies, particularly as a source of food and income (subsistence), but also as social capital, that is, a sense of connectedness, networking and social support (a coping strategy) in times of stresses and shocks such as illness, death and food insecurity as was reported in the

group sustainable livelihoods analyses discussion. This section particularly discusses in some detail subsistence agriculture as both a livelihood strategy and a coping strategy in the Maphephetheni uplands. Part of this is done in table 5.3 using the patterns of food consumption for all resident household members.

To assess the specific contribution of subsistence agriculture in the Maphephetheni uplands, the table includes foods that people had eaten in the past 30 days and could be produced locally. The 2005 household survey included all the food and non-food items that people had consumed or used within a period of 30 days prior to the household survey as illustrated in table 5.3.

Table 5.3 shows that in the month prior to survey three, about 42 percent of the surveyed households had eaten beans produced from their community and home gardens. This finding suggests that agriculture is potentially a key basis for livelihoods in rural communities such as the Maphephetheni uplands. Nevertheless, the study indicates that 48 percent of households that consumed beans in the month prior to the survey purchased the beans from markets and/or shops. This suggests that about 50 percent of the participating household resident members preferred buying beans to growing or did not produce enough. This confirms the earlier finding in this chapter that non-farm activities contributed substantially to total household income in the Maphephetheni uplands. This means that the income from non-farm sources was used to purchase food and other non-food items. About nine percent of the surveyed households consumed beans received as gifts while about two percent of households had eaten beans received as payment for work done (food for work).

From Table 5.3, it is also noted that more than 92 percent of surveyed households purchased maize meal/flour and about six percent of households received maize meal/flour as gifts while about two percent of households consumed maize meal/flour received as in kind payments. This suggests that maize meal was not produced by the respondents. The study also shows that households purchased chicken, eggs, apples, peaches, guavas, fresh milk, citrus fruits such as oranges, lemon and nartjies, beef, mutton, pork and goat meat. Table 5.3 clearly demonstrates that 78.47 percent of households had eaten green vegetables in the month prior to the survey produced from their community and home gardens, and about 74 percent of households had

consumed peanuts produced from their community and home gardens. Tomatoes (68.63 percent of households), *amadumbes* (67.92 percent of households), pumpkin (66.10 percent of households), carrots and beetroot (64.45 percent of households) and sweet potatoes (51.14 percent of households) were sourced from community and home gardens. This is an important finding and presents a strong case for agriculture to be viewed as a potentially key basis for sustainable rural livelihoods in communities such as the Maphephetheni uplands considering the large number of rural households who depend on agriculture (Ellis, 1999).

Table 5.3 Sources of food consumption within the past 30 days (expressed as percentage of households), Maphephetheni uplands, (n = 68), October 2005

FOOD ITEM	PURCHASE (percentage of households/month)	GIFT (Percentage of households/month)	PAYMENT (Percentage of households/month)	FARMING [community and home gardens] (Percentage of households/month)
Green vegetables	21.54	0	0	78.46
Peanuts	22.61	0	3.82	73.7
Tomatoes	27.45	3.92	0	68.63
Madumbes	27.49	4.59	0	67.92
Pumpkin	21.96	7.72	4.22	66.10
Carrots and beetroot	30.58	4.98	0	64.44
Sweet potatoes	45.45	3.41	0	51.14
Green mealies/maize	50	0	0	50
Beans	48	8.86	1.57	41.57
Potatoes	70.57	0	0	29.43
Peas	68.5	3.49	2.08	25.93
Bananas	68.87	10.01	0	21.12
Apples, peaches and guavas	100	0	0	0
Chicken	100	0	0	0
Citrus fruits	100	0	0	0
Eggs	100	0	0	0
Fresh milk	100	0	0	0
Meat	92.87	7.13	0	0
Maize meal/flour	92.22	5.86	1.92	0
Rice	95	3.35	1.65	0

This analysis is supported by Machethe et al. (2004) who highlighted the importance of agriculture in reducing poverty and promoting rural livelihoods. This is also substantiated by a study conducted in Indonesia that found that agricultural growth reduced the depth of poverty by 50 percent in rural areas (FAO, 2004). Similarly, Delgado (1998: 51) argued that “smallholder agriculture is simply too important to employment, human welfare, and political stability in sub-Saharan Africa to be either ignored or treated as just another small adjusting sector of a market economy ...”. Community gardens and home gardens are an important coping strategy among participating women. However, it has already been noted in this chapter that the non-farm sector also plays a key role in Maphephetheni livelihoods. A growing non-farm sector is important for promoting growth in the subsistence agricultural sector.

In this study, an overall picture is that about 64 percent of the surveyed households purchased food stuffs for consumption in the past 30 days prior to the household survey while almost 32 percent of the households produced their own food from community and home gardens. This means that both farm and non-farm sectors contributed markedly to food supply, and both are primary channels for achieving household food security and obtaining resilience to cope with the impact of morbidity and mortality. The contribution of subsistence agriculture as reported earlier on in this study is similar to that reported by Hendriks et al. (2006) and Hendriks (2003) for other areas of KwaZulu-Natal.

While nutrition security is beyond the scope of this study, it is interesting to see on Table 5.3 that a substantial number of households grew peanuts, tomatoes, pumpkin and carrots, which contribute to their nutrient intake. The consumption of these foods contributes to nutritional well-being.

To determine the specific contribution of community gardens as a source of food, farming activities that provided food crops were divided into three categories, namely: community gardens, home gardens and commercial agriculture (Table 5.4). In this study, commercial agriculture refers to the development and promotion of a profitable agricultural production and marketing system such that agricultural products are competitive locally, regionally and globally (DFID, 2003). Table 5.4 shows that all garden club members, representing their households,

sourced bananas from home gardens. Fifty five percent of households sourced some maize from home gardens while 44.42 percent of households produced maize in community gardens.

Table 5.4 Contribution of community gardens in comparison to home gardens and commercial agriculture in Maphephetheni (n = 68), October 2005

FOOD CROP	Percent of households dependent on community gardens	Percent of households dependent on home gardens	Percent of households dependent on commercial agriculture
Bananas	0.00	100.00	0.00
Carrots and beetroots	93.26	6.74	0.00
Green mealies	100.00	0.00	0.00
Green vegetables	93.74	6.26	0.00
Madumbes	79.14	20.86	0.00
Maize	44.42	55.58	0.00
Peas	68.95	31.05	0.00
Potatoes	91.25	8.75	0.00
Pumpkin	91.33	8.67	0.00
Sweet potatoes	93.00	7.00	0.00
Tomatoes	100.00	0.00	0.00

All community garden club members produced green mealies/maize and tomatoes from community gardens. Nearly 94 percent of households produced green vegetables from community gardens and 93 percent of respondents produced carrots, beetroots and sweet potatoes from community gardens. Approximately 91 percent of the participants produced pumpkin and potatoes from community gardens. Table 5.4 shows that 79 percent of community garden club members sourced *madumbes* from community gardens and 68.95 percent produced peas in community gardens. This means that community garden club members depended more on community gardens for crop production than home gardens.

Overall, about 78 percent of surveyed households depended on community gardens for food production compared to about 22 percent of households that were reliant on home gardens for food production. None of the participating households sourced food from commercial agriculture. Through group sustainable livelihoods analysis discussions, it was reported that community garden club members and their households did not engage in commercial agriculture.

From the group sustainable livelihoods analysis discussions it was reported that community gardens were a coping strategy. Community garden members stated that community gardens provided members not just with food and subsistence income, but also with a sense of belonging together, connectedness, networking, sharing and social support. This entails that community gardens foster the development of a community garden club members' identity and promote social inclusion. This means that community gardens create a rich social fabric among the garden club members necessary to cope with morbidity and mortality. This finding is consistent with the finding of Armstrong (2000: 319-327) that although harder to measure, non-economic benefits are essential reasons why community gardening makes for better livelihoods. Similarly, Patel (1991) and Sommers (1984) asserted that community gardening promotes a community atmosphere and gives people an opportunity to meet others, share concerns and solve problems together.

Hence, these findings strongly suggest that agriculture related activities are both a key basis for food and a cushion to cope with the impacts of sickness and death. Therefore, the study concludes that community gardening (subsistence agriculture) was both a livelihood strategy and a coping strategy for community garden clubs in the Maphephetheni uplands.

5.3 Chapter summary

The chapter set out to explore and discuss contribution of subsistence agriculture to food security and rural livelihoods in the Maphephetheni uplands. Chapter 5 highlighted subsistence agriculture's role in relation to household income, non-farm sources of income, food and social capital (social support). The contribution of community gardens, including home gardens and non-farm activities, was determined through the number or percentage of households dependent on the livelihood activities. The chapter assessed whether subsistence agriculture-related activities were a livelihood strategy, a coping strategy or both and found that community gardens are a potentially key basis for rural livelihoods considering the high percentage of households dependent on it. However, the non-farm sector is also key. Hence, the farm and non-farm sectors were seen to be complimentary rather than competing, although the non-farm sector contributed more to total monthly household income than the community gardens.

Furthermore, in addressing whether community gardening was a livelihood strategy or a coping strategy in the face of shocks and stresses such as morbidity and mortality and food insecurity in the Maphephetheni uplands, it became evident that community gardening (an associated activity of subsistence agriculture) played a double role. Community gardens were not just a source of food and (subsistence) income (livelihood strategy), but also a source of social capital (social support), that is, a coping strategy in times of shocks and stresses. Community garden club members viewed their gardens as providing necessary networks and social support where members shared common concerns and resources especially in times of stresses and shocks such as illness, death and even food insecurity. In the light of what coping strategies are, community gardens fulfilled a role in minimising risk and incorporating changes in household livelihood systems by providing food resources, and social and moral support for households facing hardship. Nevertheless, community gardens as consumption food security and income generating strategies in the Maphephetheni uplands could also be viewed as erosive in nature since community gardens may simply decrease vulnerability in the short-term but increase vulnerability in the long-term depending on the availability of household assets. For example, increased selling of community garden produce may weaken the household's ability to cope with illness and death in future.

Findings in this study have shown that community and home gardening in the Maphephetheni uplands contributed less to total monthly household income compared to wages, social grants and small scale commercial enterprises. This finding is in contrast to other studies (Delgado, 1998) in other sub-Saharan African countries where subsistence agricultural contribution is higher than the contribution of non-farm activities. Nevertheless, the study found that most households in the Maphephetheni uplands depended on community and home gardens for producing food crops. This is an important finding because subsistence agriculture provides a living or a means of survival for as much as 78 percent of the sample population in Maphephetheni. Morbidity and mortality undermines the role and contribution of subsistence agriculture through reduced labour supply, increased health and funeral costs and increased care resulting in reduced community and non-farm activities.

The contribution of subsistence agriculture and non-farm activities to rural livelihoods cannot be seen in isolation from its actors. Hence, chapter 6 of this study highlights roles and significance of women, particularly, community vegetable garden club members of the Maphephetheni uplands in subsistence agriculture-based rural livelihoods.

CHAPTER 6: ROLES AND SIGNIFICANCE OF WOMEN IN SUBSISTENCE AGRICULTURE AND RURAL LIVELIHOODS

Over the years, there has been a gradual realisation of the key role of women in agricultural development and their vital contribution in the field of agriculture, food security and rural livelihoods in general (DFID, 2002; Mutangadura et al., 1999; Gitting, 1990; Gittinger et al., 1990). This means that women form the backbone of livelihoods in Africa. NEPAD's (2004) Comprehensive Africa Agriculture Development Programme (CAADP) acknowledges the importance of giving special attention to the vital food-producing and entrepreneurial roles of women in rural and urban African communities. This is grounded in the premise that African women contribute substantially in both the informal and formal sectors (NEPAD, 2004). Thus women play a key role in the agricultural sector in Africa.

This chapter examines various roles and activities that women participating in vegetable community gardens in the Maphephetheni uplands play and undertake to highlight the role women play in subsistence agriculture and the contributions they make to rural households. The chapter also discusses the role of household members in subsistence agriculture and the contribution of garden club and female household members to non-farm income-generating enterprises, and services such as caring for the sick and fuel collection. The difficulties in quantifying the contribution (both direct and indirect) women make to the operations on the farm and outside the farm are also explored. The contribution of women to agriculture and non-agriculture-based livelihoods in the Maphephetheni uplands is discussed in detail in the sections that follow.

6.1 The role of women in livelihood strategies and asset bases

Studies reiterate that women are clearly a significant component of any intervention aimed at tackling the social and economic impacts of morbidity and mortality (Jayne et al., 2004). This study found that the livelihood strategies in which women in the Maphephetheni uplands were engaged included farm-related activities and non-farm livelihood enterprises and household

chores such as caring for the sick and these contribute to excessive work loads for women. Each of these activities is in turn presented and discussed below.

6.1.1 Farm-related livelihood activities of garden club and household members in Maphephetheni

Women (female members of households) provided most of the agricultural labour in community gardens. This suggests that community gardens are seen as the domain of women as confirmed by a study of community gardens conducted by Adey (1997). All community garden club members reported undertaking one or most of the following community garden tasks: ploughing, planting, watering, weeding, harvesting, processing basic food stuff and selling surplus community garden produce. Table 6.1 shows the percentage contribution to community garden tasks such as those mentioned above.

Table 6.1 Percentage of garden club members (women, n = 79) contributing to some of the community garden tasks in the Maphephetheni uplands, September and October 2003

Carry out community garden tasks?	Harvest	Plant	Water	Weed	Process	Plough	Sell community garden produce
Yes (%)	91	91	91	89.7	56.4	53.8	26.9
No (%)	9	9	9	10.3	43.6	46.2	73.1

Table 6.1 above shows that 91 percent of garden club members undertook harvesting, planting and watering activities whereas almost 90 percent of the garden club members undertook weeding. The study indicates that 56.4 percent of the community garden club members undertook most of the processing of basic food stuffs while 27 percent of the garden club members engaged in meagre marketing activities. Where garden club members reported no contribution to community garden tasks, it was because other household members (mostly women) assisted the garden club members with those activities rather than the interviewed women. Overall, these findings confirm that women are critical food producers and are central to household food

security and rural livelihoods in general. The study indicates that almost half of the garden club members (46.2 percent) did not undertake ploughing. The reason reported during group sustainable livelihoods analysis discussions was that garden club members were assisted by household members or in certain instances, the club members hired external labour or traction to prepare land. In this regard, the study also shows that on average about 34 percent of household members assisted with undertaking community garden activities such as processing/cooking and milling of basic food stuffs (43.6 percent of household members), weeding (10.3 percent), harvesting (9 percent), planting (9 percent) and watering (9 percent).

Furthermore, the study shows that almost 73 percent of community garden club members did not tend animals. Given the impoverished situation of the households in the study population (Green et al., 2000), households had relatively few assets, including livestock. Similarly, table 6.1 indicates that approximately 73 percent of members did not sell community garden produce. This was either due to low subsistence agricultural productivity or the produce was used mainly for household consumption or both. This is supported by the findings in the previous chapter where it was demonstrated that non-farm activities played a key role in contributing to rural livelihoods and supplemented or complimented agriculture-based livelihoods.

6.1.2 The role of women in non-farm livelihood enterprises

Women (community garden club respondents) undertook most of household chores. Table 6.2 below gives the percentage of women (community garden club members) who carried out household chores. Table 6.2 demonstrates that a substantially large number of community garden club members devoted some labour and time to other household chores such as cooking (85.9 percent of garden club members/respondents), house cleaning (84.6 percent), washing clothes (80.8 percent), fuel collection (78.2 percent) and water collection (78 percent of garden club members). This clearly shows that garden club members were engaged in other activities in addition to community vegetable gardening. It was reported during sustainable livelihoods analyses discussion that women carried excessive workloads.

Table 6.2 Participation of community garden club members (n = 79) in household chores in the Maphephetheni uplands, 2003

Household chores	Care for the sick	Cooking	Cleaning the house	Washing	Fuel collection	Water collection
Yes (percent)	89.7	85.9	84.6	80.8	78.2	78.2
No (percent)	10.3	14.1	15.4	19.2	21.8	21.8

Of the 79 community garden club participants, six garden club members (representing 7.8 percent of the total number of participants) reported no contribution to household chores in general. This means that 92.2 percent of the participants contributed to household chores as indicated in table 6.2 above. Almost 90 percent of the community vegetable garden club participants reported caring for the sick as one of the main activities undertaken. This implies that farm related or non-farm related activities were interrupted by illness. About 10 percent of the participants did not report caring for the sick as a household chore. This could either be attributed to absence of sickness/sick members in the household or community garden club members themselves being too infirm (some members were over 80 years old) to care for other sick household members or that other household members carried out this household task.

During the group sustainable livelihoods analyses discussion, it was reported that most community vegetable garden club members cared for the sick before and after community garden tasks. This service demanded labour that could otherwise be directed to community vegetable gardening and other income generating activities. This finding suggests that morbidity compromised the role of garden club members (women) in the Maphephetheni uplands subsistence agriculture-based livelihoods (as is highlighted in chapter 8 of this study), and this could have adverse implications for women's coping strategies.

In addition to subsistence agricultural activities and household chores, community vegetable garden club members were also engaged in other income generating enterprises (such as those reported in chapter 5) to supplement subsistence agriculture (community gardening) including block making, and water and sanitation projects that took place in the Maphephetheni uplands. These commercial enterprises provided income to the garden club members, and ultimately, to

their households. The garden club members were also engaged in small scale informal economic activities such as bead making, mat weaving, selling traditional medicine and fuel, sewing, crochet, broom making and house building. All these informal economic activities were sources of income and contributed to their rural livelihoods. Hence, women played an important role in these livelihood activities. The above analysis suggests that the key role of women in contributing to community gardening extends to the non-farm livelihood activities. This finding also confirms the second school of thought that acknowledged the contribution of agriculture to improving rural livelihoods but at the same time highlighted the importance of non-agricultural activities such as rural non-farm enterprises and household chores (McIntosh & Vaughan, 1996: 91-118; Gardner, 2005). This analysis was given prominence in the previous chapter.

When asked about how much time garden club members spent on household chores and agriculture-based activities, the members found it difficult to quantify the times. Nevertheless, Table 6.3 indicates an amount of time spent by garden club members on household chores and agriculture-based activities.

Table 6.3 Time spent by garden club members (n = 79) on household chores and agriculture-based activities in the Maphephetheni uplands, 2003

Activities	Time	No. of hours
Cooking food for school children, cleaning the house, washing and caring for the sick (if any)	05H00-09H00	4
Community gardening	09H00-14H00	5
Fetching water, wood collection, cooking and small-scale commercial activities	1400-19H00	5

On average, the tabulated activities are repeated five days per week. On week ends, members attend meetings and funerals. Women are busy with different activities to maintain their households and do not have enough time for rest/leisure.

Given the central role of women in community gardening and non-farm activities and household chores, the prevalence of morbidity and mortality has negative effects on women's coping strategies. Thus the active care giving for the sick and the dying household members are added to existing workloads of women. Increased workload reduces resilience of women to cope with livelihood insecurity shocks and stresses.

6.2 Chapter summary

Chapter six presented and discussed the diverse roles community vegetable garden club women played in the Maphephetheni uplands in subsistence agriculture, small commercial enterprises (mostly informal) and household chores such as caring for the sick, water and fuel collection. The study found that community vegetable garden club members and other female household members were engaged in various community garden tasks such as land preparation (ploughing), watering, planting, weeding, processing of basic food stuffs, harvesting and selling community garden produce, and household chores such as caring for the sick. These activities are labour intensive. Above this, caring for the sick and community garden activities are added to the already back-breaking round of chores, most of which are seen as the work of women. In turn, increased workloads reduce resilience to morbidity and mortality and other livelihood insecurity shocks and stresses.

The chapter also explicitly and implicitly acknowledged the difficulties in quantifying the direct and indirect contribution of women to the activities on the farm and off the farm. The findings show that rural women in Maphephetheni account for substantial contributions to subsistence agriculture, entrepreneurial activities and household chores, and are therefore critical to household food security and rural sustainable livelihoods. However, excessive workloads undermine the ability of women to cope with livelihood insecurity shocks and stresses since morbidity and mortality increase labour constraints and deplete already scarce assets needed to cushion the effects of morbidity and mortality.

Having presented and discussed the role of women in subsistence agriculture and rural livelihoods in general in the Maphephetheni uplands, it is important to acknowledge that the

diverse range of functions and tasks played by rural women could become compromised by social and economic impacts of morbidity and mortality. The chapter that follows discusses the changes and trends in the impact of morbidity and mortality on subsistence agriculture (community vegetable gardening) and sustainable livelihoods.

CHAPTER 7: CHANGES AND TRENDS IN MORBIDITY AND MORTALITY

In this chapter, changes and trends over the first two years of research on the impact of morbidity and mortality on women's coping strategies in the Maphephetheni uplands are discussed in detail. The chapter focuses on health outcomes. This is important in establishing whether households in the Maphephetheni uplands actually represent a basis for determining the impact of morbidity and mortality on household coping strategies, an issue discussed in detail in chapter 8 of this study. Variations and trends in terms of personal condition of health, cost of illness, caring for the sick, occurrence of deaths, causes of death, gender and illness, and cost of funerals are discussed. Correlations/relationships between variables such as the personal condition of health and gender, condition of health and age, cost of illness and condition of health for both household and garden club members are also discussed to highlight the changes and trends in the impact of morbidity and mortality on coping strategies, including community gardening.

7.1 Health outcomes

During the 2003 and 2004 surveys, questions about illness and death were asked about each person who was reported to have been ill or have died during the past year or any time during the prior year. The diagnosis and severity of each case of illness or death were described and the associated costs and burden of illness and death on the household were also discussed.

7.1.1 The extent of morbidity and mortality in the Maphephetheni uplands: changes and trends

Almost three percent (18 household members) of the 598 household members were reported to have been very sick and 18.2 percent (108 household members) had relatively poor health in 2003. In the subsequent 2004 round of interviews, 15 percent (95 household members) of 633 household members were reported to have been ill during the past year while 10 percent (63 household members) reported poor health. Evidently, the number of sick household members increased between the two rounds of interviews. There were more sick people in 2004 than they were in 2003. In total, the morbidity levels increased from 21.2 percent (126 household

members) in 2003 to 25 percent (158 household members) in 2004. Part of the explanation for the increase in the number of sick household members was that those that had reported having poor health (18.2 percent of household members in 2003) eventually became very sick. Causes of sickness among household members included tuberculosis (TB), diarrhoea, pneumonia and skin diseases (Table 7.3).

The mean cost of illness among household members of garden clubs that experienced illness in 2003 was found to be R362 per annum. It was also found that 86 percent of household members in the Maphephetheni uplands had subsidised (free) medication in 2003. It was reported during the group sustainable livelihoods analyses discussion that a mobile government clinic visited the area once a week and provided subsidised (free) medication. In addition to subsidised medication, some people bought medication rather than being entirely dependent on the mobile clinic. On average, many people benefited from subsidised medical services. The picture is slightly different in terms of the cost of illness among household members in the subsequent round of interviews in 2004. In 2004, the number of households on subsidised medication dropped to 66.7 percent. Many sick members appeared to have used paid medical services as compared to 2003. The average cost of illness in 2004 was found to be R1 325 per annum.

Thus the study indicates that there was a significant increase in terms of the cost of illness between 2003 and 2004 ($t = 5.956$, $P = 0.000$, $df = 425$). However, as can be clearly seen, the costs of illness in 2003 and 2004 were relatively low, partly reflecting the greater use of mobile government clinic that offered subsidised (free) medication for ill members of households that required care at home rather than admission to hospital.

When focusing on vegetable garden group members alone, it was also demonstrated that the condition of health of participants between 2003 and 2004 significantly and directly varied ($t = 3.554$, $P = 0.001$). As a result, costs of hospital admissions were significantly lower in 2003 than they were in 2004 among garden club members. The mean annual cost of illness among garden club members that reported illness in the 2003 round of interviews was R402 (SD \pm 1473.00) while in 2004 round of interviews, the mean annual cost of illness was R2 202 (SD \pm 2400.00).

The increase was due to the increasingly poor condition of health between 2003 and 2004 as described above.

For the scope of this study, it is also important to note that the relationship between age category and condition of health of household members was highly significant in 2003 (Table 7.1). Those household members between age categories of one and 15, and 16 and 24 had better health than those in the age category above 40 years. As household members became older, they were likely to become sick. This age group included garden club members and food security implications are likely to be adverse. People between 16 and 55 are the most productive members of society and illness reduces household productivity and caring capacity (TANGO International, 2003).

Table 7.1 Age category versus health status crosstabulation, Maphephetheni, 2003 (n = 356) and 2004 (n = 401)

		Health status in 2003 ^a					Total
		very good	Good	Fair	poor	very poor/sick	
Age in 2003 ^a	1-15 years	32	77	3	17	0	129
	16-24 years	30	45	2	9	4	90
	25-39 years	10	35	7	6	1	59
	40-55 years	3	18	11	16	2	50
	Over 55 years	1	6	3	15	3	28
	Total	76	181	26	63	10	356
		Health status in 2004 ^b					Total
		very good	Good	Fair	poor	Very poor/sick	
Age category in 2004 ^b	<1 year	1	0	0	0	0	1
	1-15 years	81	37	13	21	6	158
	16-24 years	46	19	9	12	6	92
	25-39 years	31	12	12	9	3	67
	40-55 years	11	8	12	13	5	49
	Over 55 years	5	8	6	7	8	34
	Total	175	84	52	62	28	401

a. Pearson Chi-Square value = 94.968, df = 16, Asymp. Sig. (2-sided) = 0.000.

b. Pearson Chi-Square value = 50.051, df = 20, Asymp. Sig.(2-sided) = 0.000.

This highly significant correlation was also noted in the subsequent year of survey and interviews (Table 7.1). Young household members (those between 1 – 15 years and 16-24 years) had better health compared to the older household members (above 40 years of age).

Again, as it was noted in chapter two of this study, the impact of morbidity and mortality is not gender neutral (SADC FANR VAC, 2003). Hence, this study shows that gender and the condition of health were virtually significantly correlated in 2003 while in 2004, gender tended to be related to health status of household members (Table 7.2).

Table 7.2 Gender versus health status crosstabulation, Maphephetheni, 2003 (n = 596) and 2004 (n = 441)

		Health status in 2003 ^a					Total
		very good	Good	Fair	poor	very poor/sick	
Gender status in 2003 ^a	Male	122	95	18	43	10	288
	Female	95	96	44	65	8	308
Total		217	191	62	108	18	596
		Health status in 2004 ^b					Total
		very good	Good	fair	poor	very poor/sick	
Gender status in 2004 ^b	Male	100	46	21	22	13	202
	Female	93	44	42	41	19	239
Total		193	90	63	63	32	441

a. Pearson Chi-Square value = 18.321, df = 4, Asymp. Sig. (2-sided) = 0.001 (in 2003);

b. Pearson Chi-Square value = 11.128, df = 4, Asymp. Sig. (2-sided) = 0.025 (in 2004).

More female household members were reported sick than male household members, yet women's roles and places in subsistence agriculture are critical to food security and livelihoods (FAO, 2002; UNAIDS, 2002; Toupozis, 2002; Devereux & Maxwell, 2001: 1-12 cited by Devereux and Maxwell (eds), 2001; Muchopa & Mutangadura, 1999 cited by Mutangadura et al., 1999). Using Pearson correlation (bivariate) analysis, the study found a statistically strong relationship between age category (bracket) and contribution to household income category ($r^* = 0.459$, $n = 598$, $P = 0.000$ and $r^* = 0.370$, $n = 633$, $P = 0.000$) in both 2003 and 2004, respectively (Appendix K).

This means that the older the household member, the more likely their contribution to household income.

With regard to mortality, six (7.6 percent of households) of the 79 community garden club members (representing 79 households) reported a death during 2003 while thirty one (42 percent of households) of 73 garden club members reported occurrence of a death in their household in the 2004 survey. This means that the number of household members that died per year increased from six to thirty one in 2003 and 2004, respectively. In 2003, almost 67 percent of those that died were female while 33 percent were male. In 2004, 68 percent of those that died were female while 32 percent were male. This showed higher death rates among women in 2003 and 2004. Table 7.3 shows the distribution of diagnoses with specific reference to the causes of death as reported at baseline of research and in the subsequent round of survey.

Table 7.3 Causes of death in 2003 (n = 598) and 2004 (n = 633) in the Maphephetheni uplands

Causes of death	Percent (2003)	Percent (2004)
Tuberculosis (TB)	34.3	36.5
Multiple illnesses/combination of any of TB, pneumonia and diarrhoea	28.3	23.3
Diarrhoea	20.7	22.0
Pneumonia	16.7	18.2
Total	100.0	100.0

Table 7.3 indicates that about 34 percent of deaths in the Maphephetheni uplands in 2003 were caused by tuberculosis (TB) while 28.3 percent of deaths were due to multiple illnesses such as TB, pneumonia, diarrhoea, skin rashes, diabetes and arthritis. About 21 percent of deaths were due to diarrhoea and 17 percent of deaths were due to pneumonia. The percentage of deaths increased in 2004. Deaths as a result of tuberculosis accounted for 36.5 percent, diarrhoea (22 percent) and pneumonia (18.2 percent). Multiple illnesses as a cause of death dropped from 28.3 percent to 23.3 percent in 2003 and 2004, respectively. From the causes of death, it is clear that

ill household members were likely to have an opportunistic disease which tended to be severe in nature. In the wake of HIV/AIDS, the nature of the causes of death may emphasise the chronic and mounting burden of the HIV/AIDS epidemic on households (Bachmann & Booysen, 2003).

The study found that the cost of funerals among the affected households that reported a death of a family member at the baseline year ranged from R750 to R1350 with the average cost of R1038 (SD \pm 214.35) per funeral. The cost of funerals slightly increased in the subsequent round where funeral costs ranged from R750 to R1 500 with the average cost of R1080 (SD \pm 238.20). The relatively low funeral costs suggest low income levels of the Maphephetheni uplands households as was pointed out in chapter three of the study (Green et al., 2000). From the group sustainable livelihoods analysis discussions, it was reported that other funeral costs were hidden under practices such as slaughtering of animals (goats, cows, chickens or sheep) and use of community garden produce for food during funeral period that were not given monetary values. It was also reported during the group sustainable livelihoods analysis discussions that burial societies played a role when death occurred. Neighbours and relatives reportedly offered assistance towards funeral expenses. These factors accounted for low costs of funerals in the Maphephetheni uplands compared to a study by Roth (2001: 39-50) as indicated below. Given these factors, it is clear to see that if such practices were given monetary value, funerals become costly.

Roth (2001: 39-50) noted that meeting funeral costs places an economic burden on households. Roth's study (2001: 39-50) in the Grahamstown area, Eastern Cape found that sampled households spent approximately 15 times their average monthly income on a funeral. For a township where the average monthly household income was R412.73 an outlay of anywhere between R2,350 and R15,000 per funeral was considerable. This shows that households needed relatively large sums to finance funerals. Roth (2001: 39-50) noted that selling assets to pay for funerals was uncommon due to the time lag between the sale of assets and the receipt of cash. Furthermore, Roth (2001: 39-50) found out that one common means of funding funerals was through funeral insurances. A myriad of formal and informal insurers compete to sell funeral insurance to low income South Africans. The need to provide relatively expensive funerals in the wake of HIV/AIDS epidemic is putting increasing pressure on poor households in South Africa (Roth, 2001: 39-50).

It is evident in this study that morbidity and mortality have over time exacted a more severe burden on affected households, with the same households experiencing illness or death in each of the years of field research. In the context of HIV/AIDS, it is important to note that the causes of death as reported above, may point to opportunistic diseases of HIV and AIDS. This is consistent with the findings of another study which reported that morbidity and mortality experienced by rural households exhibit a typical HIV/AIDS pattern, with larger numbers and a greater proportion of adults between 15 and 49 years old having been ill or having died (TANGO International, 2003). In a similar 2003 study in South Africa, between 70 percent and 80 percent of morbidity and mortality were attributed to HIV/AIDS or related infectious diseases and opportunistic infections (Bachmann & Booysen, 2003).

The effects of morbidity and mortality, in terms of reduced labour potential, increased health care and funeral costs, increased care giving and depleted resources, minimises the ability of women to cope with livelihood insecurity shocks and stresses. Lack of or erosion of resilience of women to shocks and stresses could force women to devise erosive coping strategies such as borrowing money, selling assets and reducing food consumption.

7.1.2 Burden of morbidity and mortality

Thus far this chapter has acknowledged that morbidity and mortality represent a considerable economic burden on affected households. Morbidity and mortality impact on community gardening and income generating activities (Toupozis, 2002; Gillespie, 1989: 301-312). In the group sustainable livelihoods analysis discussions, community garden members reported that illness and death disrupted community and non-community gardening activities. In 2003 and 2004 rounds of interviews, it was also reported through group sustainable livelihoods analysis discussions that care for household members was provided mainly by relatives. Women mostly cared for the sick and yet, women (garden club members and female household members) primarily carried out farm and non-farm activities as was reported in chapter 6. In this case, the study shows that it was mainly women (respondents and female household members) who were affected directly and indirectly by sickness and deaths leading to disruption of farm and non-farm

activities. This means that morbidity and mortality significantly impacted on women's coping strategies.

Table 7.4 below highlights the high association between caring for the sick and contribution to household chores, and the likely implications for community garden activities. Caring for the sick and contributions to household chores were highly significantly correlated in 2003 and 2004 (Table 7.4). Caring for the sick had an influence on the household chores since the study participants perceived caring for the sick as a household chore. This means that caring for the sick formed one of the main aspects of the ordinary undertakings of household chores and intensified the undertaking of other household chores in addition to community gardening activities. This suggests that household members spent time looking after the sick, resulting in less community gardening.

Table 7.4 Caring for the sick versus household chores crosstabulation, Maphephetheni, 2003 (n = 598) and 2004 (n = 441)

		Household chores in 2003^a		Total No
		No	Yes	
Caring for the sick in 2003 ^a	No	253	143	396
	Yes	3	199	202
Total		256	342	598
		Household chore in 2004^b		Total No
		No	Yes	
Caring for the sick in 2004 ^b	No	173	110	283
	Yes	0	158	158
Total		173	268	441

a. Pearson Chi-Square value = 212.766, df = 1, Asymp. Sig. (2-sided) = 0.000 (in 2003);

b. Pearson Chi-Square value = 158.935, df = 1, Asymp. Sig. (2-sided) = 0.000 (in 2004).

Thus, these results highlight the effect of morbidity and mortality on current and future supply of labour, and hints at likely negative implications for food and livelihood security and the capacity of affected households to cope, an issue to be explored further in chapter eight of this study. It is clear from this study that the evidence and trends in morbidity and mortality reported reflect the nature of the burden of morbidity and mortality on households. The question, therefore, is whether this sustained burden of morbidity and mortality would push affected households deeper

into poverty, which shifts the focus to the linkage between morbidity and mortality and resource or asset bases, an issue discussed in chapter eight.

7.2 Chapter summary

Chapter seven firstly directed its attention to discussing health outcomes, and this was a necessary foundation in order to determine the impact of morbidity and mortality on women's coping strategies in the Maphephetheni uplands. The study demonstrated that morbidity and mortality have jointly over the years of research exacted a more severe economic stress on households, particularly on community garden club members. In this perspective, the study has found that morbidity and mortality represented a considerable economic burden due to clear trends in terms of increase in illness, deaths, care giving, costs of illness and funerals over the years of research. Evidence in this study also suggests that morbidity and mortality impacted on the entire community rather than just affected households *per se*. People spent time visiting the sick and mourning when death occurred. The community obligation to attend funerals disrupted farm and non-farm activities.

Thus morbidity and mortality represent a considerable social and economic stress on households. In the wake of HIV/AIDS epidemic, it was noted that the trends in morbidity and mortality and the opportunistic diseases exhibited a typical HIV/AIDS pattern. Such findings have important implications for women's coping strategies, including community gardening, and these are discussed in great detail in the chapter that follows.

CHAPTER 8: IMPACTS OF MORBIDITY AND MORTALITY ON SUBSISTENCE AGRICULTURE, SUSTAINABLE LIVELIHOODS AND COPING STRATEGIES

Literature reported in this study has suggested that the impacts of morbidity and mortality on the productive capacity of rural households are strongly felt on two important farm production parameters (Annan, 2002; Dorrington et al., 2001; Baier, 1997). This chapter sets out to discuss some of the specific socio-economic impacts of morbidity and mortality on women's coping strategies, including community gardens. Literature also showed that morbidity and mortality strip individuals, households and communities of different forms of capital – human, financial, social, physical and natural (UNAIDS, 2002; DFID, 2000). This has important implications for food security, coping strategies and rural livelihoods in general. Specific impacts of morbidity and mortality on agriculture-based livelihoods, household coping strategies and to some degree mitigating factors are discussed in detail in the sections that follow.

8.1 Impact on household labour and livelihood supply

It was noted in chapter two of this study that the impact of chronic morbidity and mortality on productive capacity of rural households suggest that their effects are felt on two key farm production parameters: reduction of labour and productivity due to sickness and death; and a negative effect on the availability of disposable cash income due to medical and funeral costs (Dorrington et al., 2001; Roth, 2001: 39-50; Barnett & Rugalema, 2001; Baier, 1997). Clearly, morbidity and mortality eroded household resource and asset bases of the Maphephetheni uplands households and resulted in labour constraints.

The study found that poor health and death impacted directly on food production by hindering the ability of the garden club and household members to engage in community garden activities. It was noted in chapter three that garden club members were comprised of women. In chapter six, it was pointed out that women provided most labour for food production and undertook all of the processing of basic food stuffs, hoeing and weeding, harvesting and marketing activities. This

shows that women are critical food producers and are central to household food security and livelihoods. Yet, illness and/or death of household members interrupted this.

Studies show that reduced labour, due to morbidity and mortality, leads to reduced agricultural productivity and affects availability of cash income (SADC FANR VAC, 2003; du Guerny, 2002; Roth, 2001: 39-50). Contrary to expectation, there was a significant variation in household size between 2003 and 2004 in the sense that the number of household members significantly increased in 2004 ($t = 3.133$, $P = 0.000$, $df = 440$). It was reported in chapter three that in 2003, the average household size was eight while in 2004 the mean household size was nine. The slight increase in household members was due to members joining the household or new births since the first round of interviews.

8.2 Impacts of poor health and mortality on household income

Tables 8.1 to 8.4 below highlight the effects of poor health and mortality on household income. The income categories provided in Tables 8.1 to 8.3 below relate to the types of grants that household members received from government. These grants included child support, state pension and disability as reported in 2003 and 2004. This study found that there was a highly significant relationship between the personal condition of health and household income per month at the base year of the study as well as in the subsequent year of research (Tables 8.1). Income influenced the health status of household members. The members that had more income experienced poor health and vice versa. It has been reported in chapter 7 of this study that age and income were highly related. The older the person, the higher the income they received. It, therefore, stands to reason that the older the household member, the more income they received (through grants) and the sicker they became (due to old age). In addition, it was reported in the sustainable livelihoods analysis discussions that migrants with salaried employment came home from the city of Durban to be nursed by their household members. Table 8.8 below shows the extent of migration in the Maphephetheni uplands.

Table 8.1: Income category versus health crosstabulation, Maphephetheni, 2003 (n = 596) and 2004 (n = 441)

		Health status in 2003^a					Total
		very good	good	Fair	Poor	Very poor/sick	
Income category (Rands) in 2003 ^a	No income	167	156	47	68	14	452
	<160	27	17	1	8	0	53
	161-699	15	11	4	5	0	35
	over 700	8	7	10	27	4	56
	Total	217	191	62	108	18	596
		Health status in 2004^b					Total
		very good	good	Fair	Poor	Very poor/sick	
Income category (Rands) in 2004 ^b	No income	143	57	35	30	15	280
	< 160	7	7	3	1	1	19
	161-699	31	17	12	18	6	84
	over 700	12	9	13	14	10	58
	Total	193	90	63	63	32	441

a. Pearson Chi-Square value = 62.017, df = 12, Asymp. Sig. (2-sided) = 0.000 (in 2003);

b. Pearson Chi-Square value = 38.107, df = 12, Asymp. Sig. (2-sided) = 0.000 (in 2004).

Caring for the sick and contributions to household incomes were highly significantly related in 2003 and 2004 (Table 8.2). Low income related to caring for the sick. The more care was needed for sick household members, the lower the household income. Income received from grants (pension in particular) was spent on caring for the sick. From the group sustainable livelihoods analysis discussions, it was reported that households affected by morbidity and mortality were relatively more dependent on non-employment sources and remittances, given high unemployment rates in the Maphephetheni uplands (Green et al., 2000). This hints at the likely importance of social grants in allowing households to cope with illness and death or other similar shocks such as food insecurity.

Table 8.2: Income category versus care for the sick crosstabulation, Maphephetheni uplands, 2003 (n = 598) and 2004 (n = 441)

		Caring for the sick in 2003^a		Total Number
		No	Yes	
Income (Rands) in 2003 ^a	No income	278	176	454
	<160	48	5	53
	161-699	31	4	35
	over 700	39	17	56
	Total	396	202	598
		Caring for the sick in 2004^b		Total Number
		No	Yes	
Income (Rands) in 2004 ^b	No income	194	86	280
	<160	8	11	19
	161-699	58	26	84
	over 700	23	35	58
	Total	283	158	441

a. Pearson Chi-Square value = 27.201, df = 3, Asymp. Sig. (2-sided) = 0.000 (in 2003);

b. Pearson Chi-Square value = 23.240, df = 3, Asymp. Sig. (2-sided) = 0.000 (in 2004).

Similarly, the cost of illness and income from grants were highly significantly related in 2003, and also in 2004 (Table 8.3). Households that received income from grants spent more on illness, that is, the more grants household members received from government, the more expenditure on illness. This means that illness eroded household income. It was most likely that income from grants was used to buy medication and other food stuffs for sick household members. Therefore, healthcare expenditure translated to depletion of household income.

Table 8.3: Grants category versus cost of illness category crosstabulation, Maphephetheni, 2003 (n = 598) and 2004 (n = 632)

		Cost of illness category in 2003^a				Total
		No income	< 160	161-699	over 700	
Grants (Rands) in 2003 ^a	No income	399	32	21	2	454
	< 160	46	5	2	0	53
	161-699	30	3	2	0	35
	over 700	39	6	8	3	56
Total		514	46	33	5	598
		Grants category in 2004^b				Total
		No income	< 160	161-699	over 700	
Cost of illness (Rands) in 2004 ^b	No income	397	8	56	24	485
	< 160	28	0	10	2	40
	161-699	33	0	25	24	82
	over 700	13	0	4	8	25
Total		471	8	95	58	632

a. Pearson Chi-Square value = 27.115, df = 3, Asymp. Sig. (2-sided) = 0.001 (in 2003);

b. Pearson Chi-Square value = 100.743, df = 3, Asymp. Sig. (2-sided) = 0.000 (in 2004).

In addition, there was a highly significant relationship between selling community garden produce and caring for the sick in both 2003 and 2004 (Table 8.4). Caring for the sick was related to the selling of agricultural produce. This means that the increased need for care of the sick translated to higher sales of garden produce. This seems to suggest that one reason for disposing of community garden produce was to buy medication and food for sick household members although very little community garden produce was sold.

Table 8.4: Selling agricultural produce versus caring for the sick crosstabulation, Maphephetheni uplands, 2003 (n = 598) and 2004 (n = 441)

		Caring for the sick in 2003^a		Total No
		No	Yes	
Selling agricultural produce in 2003 ^a	No	366	90	456
	Yes	30	112	142
Total		396	202	598
		Caring for the sick in 2004^b		Total No
		No	Yes	
Selling agricultural produce in 2004 ^b	No	275	96	371
	Yes	8	62	70
Total		283	158	441

a. Pearson Chi-Square value = 169.285, df = 1, Asymp. Sig. (2-sided) = 0.000 (in 2003);

b. Pearson Chi-Square value = 100.679, df = 1, Asymp. Sig. (2-sided) = 0.000 (in 2004).

The correlation between selling community garden produce and caring for the sick entailed a vital relationship between the five types of capital and the coping strategies that women adopted in the face of illness and death, an issue that is explored in detail in section 8.5 below. It is acknowledged, however, that government grants were a source of income for many households in the Maphephetheni uplands and represented an important safety net (a mitigating factor) and a potential strategy to cope with stresses such as illness, death and food insecurity. This is discussed in greater detail below.

8.3 Accessibility to South African government grants

South Africa has a well-developed system of social security compared to most other developing countries and on par with systems in many developed countries (Guthrie, 2002: 122-146; Seekings, 2002: 1-38). This system includes a non-contributory pension system, as well as a number of social grants that aim to assist households in caring for children and the disabled. Social grants (pensions, child support, disability, care dependency and foster care grants) are likely to play an important part in mitigating the socio-economic impact of morbidity and mortality on women's coping strategies (Devereux, 2002: 657-675; Guthrie, 2002: 122-146; Seekings, 2002: 1-38; van der Berg and van der Bredenkamp, 2002: 39-68).

This study shows that although some households benefited from social grants, a large proportion of households did not benefit. It is clear from this study that take-up rates for child support and disability grants were relatively low when compared to the large proportion of households. For example, table 8.5 below shows that almost 74 percent of members in the Maphephetheni uplands did not benefit from grants or remittances in 2003. Only 7.7 percent of members had access to child support grant whereas 6.5 percent benefited from pension. Almost 11 percent of members had access to remittances. This study suggests that wide disparities existed between access to sources of income such as grants and those that had no source of regular income whatsoever. These figures were relatively different in 2004. The number of members that did not benefit from grants or other sources of income (remittances) dropped from 73.9 percent to 69.4 percent. Those that benefited from state pension accounted for almost 11 percent of members in 2004. This means that the number of state pension receivers increased over the two years. This was likely due to increased awareness of the existence of the social security system and people qualifying for the grant in terms of age or increased improvement in the administration of social security grants on the part of the Department of Social Welfare.

Again, when reference is made to child support grants both at base line and subsequent year or round of interviews, an increase is noted from 7.7 percent in 2003 to 11.3 percent in 2004. Part of the explanation for this increase in child support grant was the addition of babies to households reported in 2004 and the above given factors. Households that had remittances decreased in 2004 by almost 3 percent. The decrease was most likely due to deaths. This suggests that study participants and households were becoming dependent upon social security grants as a main source of income, and grants were critical in mitigating the impact of morbidity and mortality.

Table 8.5 Type of grant or income source of household members in 2003 (n = 598) and 2004 (n = 633) in the Maphephetheni uplands

Income type	Frequency (2003)	Percent of household members (2003)	Frequency (2004)	Percent of household members (2004)
Remittances	65	10.9	35	7.9
Child support grant	46	7.7	50	11.3
State pension	39	6.5	48	10.9
Disability grant	2	0.5	6	1.0
None	442	73.9	306	69.4
Total	598	100.0	441	100.0

Samson (2002: 69-97), Samson et al. (2002), and Guthrie (2002: 122-146) emphasised the problems with targeting and administration of government grants in explaining the low take-up rates for grants such as child support and disability grants. Riphahn (2001: 379-397) presented an overview of the international literature on take-up rates of government rates and shows how predicted up-take rates increase as the value of the transfer rises, but also noted that up-take falls as the application cost and stigma attached to beneficiary status increases. In this study, this raises the possibility that take-up rates of disability grants remained low due to the associated stigma and high cost of accessing this grant just as the take-up of child support grant due to its relatively small value compared to other social grants. In this regard, the study found that only half to one percent of household members benefited from disability grants in 2003 and 2004, respectively.

Hence, this study suggests the need to address constraints to the take-up of social grants by those that qualify to receive such support since overall evidence highlights the relatively important role of social grants in assisting households cope with impacts of morbidity and mortality, and other shocks. Therefore, this study supports the findings of other scholars that households with access to social grants, especially pension grants, are relatively better off in terms of the ability to cope with morbidity and mortality than those that do not (Samson et al., 2002). The evidence also emphasises the likely importance of the child support grant, disability and pension grants in mitigating the impact of HIV/AIDS, given that increased eligibility for these grants are driven

largely by the increasing burden of chronic illness, orphan crises and poverty situations of households.

Increased access to child support and disability grants suggests that these grants were unlikely to provide a long-term solution to poverty in affected households. Increased access in state pension grants highlights the likely important role of the grants (especially given the relatively high monetary value of these grants) in providing longer-term social safety nets to affected households, given that in this study there were 25 percent more sick household members in 2004 than in 2003 (21.2 percent). Yet, take-up rates for child support and disability grants were relatively low, given the burden of illness in the Maphephetheni uplands. Many households affected by morbidity and mortality remained beyond the grasp of the social safety nets that could be necessary in mitigating the impacts of morbidity and mortality. In addition, the study noted that a relatively large proportion of households did not benefit from social grants. Much more scope remains to improve take-up rates and criteria for social grants.

In terms of the general trends in access to social grants between 2003 and 2004, evidence suggested that access to social grants had increased slightly. Table 8.5 shows that access to state pension grants increased in 2004 over 2003. This relative and less marked increase in access to social grants reported above was only possible where initial uptake was low and/or where increasing numbers of households met the eligibility criteria over time. For example, a household member reaching retirement age and/or an HIV infected person falling ill in the case of disability grant and new born or older children qualifying for child support grants. Again, continued efforts by the Department of Social Development to roll out grants to eligible households also probably explain part of the increase in recipients. Nevertheless, the general trends in access to grants as noted above hide the considerable and constant change in access to social grants. Changes in access to social grants were driven by changes in household composition resulting from a combination of morbidity and mortality and changes in the socio-economic circumstances of households. The figures in table 8.5, therefore, hide substantial differences in terms of access to different types of grants. Social grants are viewed as a potential coping strategy among the participating garden club members to cushion the effects of morbidity and mortality. However, social grants could also act as a disincentive for community vegetable gardening.

8.4 Health care and savings

In order to understand the financial responses (coping strategies) of households affected by morbidity and mortality, it is important to examine healthcare and levels of savings. The percentage of households in the Maphephetheni uplands with savings was found to be 26.2 and 29.8 percent in 2003 and 2004 respectively. These percentages reported are higher than the 41.1 percent those reported by May et al. (2000). It should be noted that in the Maphephetheni uplands, the most prominent savings were funeral policies and *stokvels*. Household and community garden members reported monthly contributions to *stokvels* and burial clubs/societies. Members contributed a monthly fee of R50 to *stokvels* and another R50 to burial clubs. Household and garden club members were free to contribute more or less than R50 to *stokvels*. The amount contributed depended largely on financial ability of the member. It has been noted already that a significant correlation between caring for the sick and contribution of garden club and household members to household income was found (Table 8.2). Caring for the sick eroded household income and reduced contributions of members (garden and household) to household income.

8.5 Household financial and consumption coping strategies and asset base

It was noted in chapter two of this study that morbidity and mortality can be a shock to household food security on the one hand, but on the other, they have such distinct effects, especially when related to HIV/AIDS epidemic as HIV/AIDS weakens livelihood strategies and entrenches poverty (SADC FANR VAC, 2003; Baylies, 2002: 611-32; Haddad & Gillespie, 2001: 487-511). This means that morbidity and mortality represent an extreme source of livelihood and food insecurity shocks that require multiple coping strategies on the part of farm households (SADC FANR VAC, 2003; Davies, 1996; Singh & Titi, 1994). Section 8.5.1 discusses financial coping strategies of households in the Maphephetheni uplands in the face of shocks such as illness, death and food insecurity, followed by consumption strategies.

8.5.1 Household financial coping strategies

Table 8.6 reports on the frequency of financial responses by households to help cope with illness, death and food insecurity.

Table 8.6 Use of financial coping strategies by households to help cope with income shocks in the Maphephetheni uplands in 2003 (n = 79) and 2004 (n = 73)

Financial coping Strategy/response	Borrow money from friends or relatives (%)	Use of own cash savings (%)	Sell livestock (%)	Sell assets (%)
Yes (2003)	62.1	26.2	23.0	4.9
Yes (2004)	83.6	29.8	26.3	6.4

Table 8.6 indicates that the most frequent financial coping strategy was borrowing, followed by use of savings, and the sale of livestock and other assets. This makes sense when considering that the households in the Maphephetheni uplands were generally and primarily poor households with few assets and low income (Green et al., 2000), which explains why a relatively small percentage of households actually used savings or sold assets.

In 2003, garden club members were asked whether they had sold an asset or borrowed money in the past year. During the subsequent year/round of interviews, the same information was sought. There was an increase in the frequency of responses in employing a combination of these coping strategies, for example, borrowing money at first, using savings as a next step and only selling an asset as a last resort. The increase in the frequency of responses makes sense considering that earlier in this chapter, it was noted that there was a significant increase in morbidity and mortality, costs of illness and funerals between 2003 and 2004. This, therefore, translated to increases in frequency of financial coping strategies between the same periods. The discussion in the subsequent sections focuses on the specific details of these financial coping strategies, for example, the way in which and the reasons why households exercised these strategies. Here, it needs to be noted that the focus was not on comparing these results across the two rounds of interviews and surveys, but on analysing the pooled data from 2003 and 2004 rounds of interviews.

8.5.1.1 Borrowing

From the group sustainable livelihoods analyses discussion, it was reported that the predominant purpose for borrowing money was to pay for food emphasising the relatively impoverished situation in which households found themselves. The problem in the longer run is that this could move households affected by morbidity and mortality deeper into poverty as more resources are depleted in favour of debt repayments in the absence of improvements in household income or employment levels. The reality of this threat could become clear if the amount of money borrowed relative to average annual household income and total current debt was examined. The likely large proportions could be particularly devastating for households affected by illness and death, given that households also had to cope with increased medical expenses and funeral costs.

More importantly, the purpose for which households borrowed money also suggests that morbidity and mortality could play a role in households affected by morbidity and mortality taking on increasing levels of debt. A relatively large proportion of responses by affected households indicated that money was used to pay for funerals, particularly in the case of affected households that had experienced morbidity or mortality both in 2003 and 2004 rounds of household surveys. Households that had experienced morbidity or mortality in each period were more likely to have borrowed money from relatives or friends (Table 8.6). This hints at the important role of not only the extended family but wider social networks in helping households cope with the socio-economic impact of morbidity and mortality.

8.5.1.2 Use of own cash savings

In qualitative terms, households affected by morbidity and mortality reportedly found it difficult to save money except through *stokvels* and burial societies. This suggests that the use of savings, as argued elsewhere, represented a response or coping strategy to relatively severe and ongoing financial crises (Booyesen et al., 2004). The most common purpose for using savings was to pay for funerals, medical expenses and to buy food. Households that had few or no assets found it difficult to save except for monthly contributions to *stokvel* and burial societies. Households affected by morbidity and mortality found it difficult to cope with illness, death and food

insecurity than wealthier households. Households that were unable to meet their needs in times of crisis such as illness and death, were assisted by neighbours, friends, or extended family members, suggesting the importance of networks (social capital).

8.5.1.3 Sale of livestock or other assets

Table 8.7 indicates a low asset ownership by households in the Maphephetheni uplands as surveyed in 2003. The relatively low asset ownership also explains why few households were able or willing to exercise asset sales as a financial coping strategy. Unlike in the case of borrowing and use of savings, the reported reasons why these assets were sold do not outright suggest that morbidity and mortality played an important role in decisions to sell assets, although funerals did feature as a reason. This may only indicate that households that sold assets actually did so to pay for expenses they could no longer afford (such as medical and /or funeral costs). All in all, the loss of any asset means that the resources of that particular household are depleted, making it more difficult to cope with the impact of illness and future death. Nevertheless, generalisations cannot be made that the level of assets makes the households wealthy in the first place.

Table 8.7 Asset ownership in the Maphephetheni uplands among study participants in 2003 (n = 79)

Assets	Minimum	Maximum	Mean	Std. Deviation
Number of goats	0	18	3.49	4.032
Number of cattle	0	10	1.39	2.275
Number of poultry	0	45	6.25	8.623
Number of sheep	0	7	.52	1.709
Number of Television sets	0	1	.21	.413
Number of carts/ wheelbarrows	0	3	.16	.522
Number of fridges	0	2	.28	.521
Number of ploughs	0	9	1.93	1.365
Number of bicycles	0	1	.07	.250
Number of bakkies/truck/car	0	1	.10	.300
Number of radios	0	3	.74	.575

When asked how families coped with increased funeral costs it became evident that the stress associated with financial liability was often greater than the emotional stress of losing a household member. This finding is consistent with Crawley's (2001: 1-7) finding that poverty was made more desperate by the cost of AIDS medical treatment and loss of income. To this effect, Crawley (2001: 1-7) concluded that AIDS related illnesses test the strength of family ties. The uncertain conditions under which households affected by morbidity and mortality find themselves, coupled with the loss of income benefits, leads to feelings of anxiety (Cross, 2001: 133-147). The overwhelming sentiment expressed by the participants was that households were left with huge financial burdens after the burial of a household member as the deceased, in most cases, died being unemployed. This is confirmed by Baylies (2002: 611-32) who emphasised that morbidity and mortality represent an extreme source of livelihood insecurity shock that requires multiple coping strategies on the part of farm households. Borrowing, use of savings and sale of assets could also be compounded by migration of family or household members. Migration could potentially create the flow of both cash and HIV, and could result in increased morbidity and mortality (du Guerny, 2002). The following section directs its attention to discussing migration as one of the coping strategies in the Maphephetheni uplands.

8.5.1.4 Migration

During the first round of interviews, household respondents were asked to give the status of their household members, whether resident or migrant. From the total of 598 household members from the 79 households that were interviewed and surveyed, 11 percent of household members were migrants as shown in Table 8.8 below.

Table 8.8 Percentage of migrants and residents in 2003 (n = 598) and 2004 (n = 633) in the Maphephetheni uplands

Valid	Frequency (2003)	Percent of household members (2003)	Frequency (2004)	Percent of household members (2004)
Migrants	65	10.9	72	11.4
Residents	533	89.1	561	88.6
Total	598	100.0	633	100.0

Most migrants were male and ranged from 16 to 50 years old and their average age was 32. It was clear that productive members of the communities had left households and moved to urban locations such as Durban. The number of migrants increased less markedly in the subsequent year of interviews. Table 8.8 shows that the number of migrants increased to 11.4 percent in 2004. This indicates that migration was relatively limited. The main reasons for migration included employment seeking and marriage.

Having discussed financial coping strategies that were applied by households in the Maphephetheni uplands, it is important to present household consumption coping strategies in the face of income poverty and food insecurity and how this becomes compounded by morbidity and mortality.

8.5.2 Household consumption coping strategies

A study by CARE and WFP (2003) noted that a complete analysis of household food security would require a detailed understanding of livelihoods and assets. However, the same study proposed the coping strategies index as an adequate indicator of household food security. The coping strategies index is used to determine the impact of morbidity and mortality on women's coping strategies in the Maphephetheni uplands. Vulnerability to food insecurity exacerbates the impact of morbidity and mortality, and yet at the same time morbidity and mortality render households more vulnerable to food insecurity. Here, the impact is vicious and bi-directional. In this perspective, Barnett and Whiteside (2002), Haddad and Gillespie (2001: 487-511) and FANTA (2000) emphasised the bi-directional and mutually reinforcing relationship between morbidity and mortality and food insecurity, and argued for increased efforts at the mitigation of these impacts.

Table 8.9 indicates the frequency of household consumption coping strategies in the Maphephetheni uplands and that the most frequent strategy applied was consuming seed stock held for the next planting season exercised by 50.8 percent of households. The second most frequently applied strategies were reliance on less preferred and less expensive foods which was exercised by 42.6 followed by borrowing food or reliance on help from a friend or relative and

limiting portion size at meal times which 34.4 percent of households practiced. The fourth coping strategy was gathering of wild food for consumption by household members with 32.8 percent of households exercising the strategy. These strategies suggest erosive behaviour that seemingly compromises diets of household members, more particularly for sick members, further pushing households deeper into poverty through debt repayments. Furthermore, consumption of seed stock could result in low community gardening productivity in the subsequent season. However, the study also shows that more than 80 percent of sample households did not employ more severe consumption coping strategies such as skipping entire days without eating (83.6 percent of households) and feeding working members of the household at the expense of non-working members (86.9 percent of households).

To see this in perspective and holistically, the severity of each of the coping strategies shown in Table 8.9 was presented in chapter four where consumption coping strategies of similar severity were grouped and ranked by groups according to their perceptions (Table 4.2). This was useful in determining or suggesting the degree of food insecurity and how this could be compounded by morbidity and mortality for households. This study indicates that coping strategies such as gathering wild food and skipping entire days without eating were ranked by group informants to be very severe. Group informants were members of community from each garden club different to the study participants.

Begging food from neighbours or relatives, feeding working members of the household at the expense of non working members, restricting consumption of adults in order for small children to eat and consumption of seed stock held for the next planting season were ranked to be severe coping strategies. The group informants in the Maphephetheni uplands perceived limiting portion sizes at meal times and relying on less preferred and less expensive foods as not severe or the least severe. The study suggests that the strategies perceived by the ten group informants as not severe or the least severe were strategies that formed part of the normal way of living for people in the Maphephetheni uplands. Morbidity and mortality reinforce erosive coping strategies by weakening the ability of women to withstand livelihood insecurity shocks and stresses.

Table 8.9 Household consumption coping strategies applied in the uplands in 2004 (n = 73)

Coping strategy	Never (%)	Hardly at all (%)	Once in a while (%)	Pretty often (%)	All the time/ everyday (%)
1. Rely on less preferred and less expensive foods	8.2	8.2	32.8	42.6	8.2
2. Borrow food, or rely on help from a friend or relative	16.4	8.2	36.1	34.4	4.9
3. Buy food on credit	65.6	1.6	6.6	16.4	9.8
4. Gather wild food, hunt or harvest immature crops	26.2	9.8	23.0	32.8	8.2
5. Consume seed stock held for the next season	24.6	4.9	9.8	50.8	9.8
6. Send household members to eat elsewhere	65.6	9.8	13.1	11.5	0
7. Limit portion size at meal times	24.6	9.8	27.9	34.4	3.3
8. Restrict consumption of adults for small children to eat	50.8	8.2	13.1	24.6	3.3
9. Feed working members of household at the expense of non-working members	86.9	6.6	6.6	0	0
10. Reduce number of meals in a day	37.7	18.0	19.7	23.0	1.6
11. Skip entire days without eating	83.6	6.6	6.6	3.3	0
12. Beg from neighbours or friends	32.8	32.8	27.9	6.6	0

In addition to understanding the frequency and severity of household consumption strategies applied by households in the Maphephetheni uplands, it was important to see how consumption coping strategies related to other variables such as household income and between consumption strategies themselves. To this end, a Chi-Square analysis was conducted (Appendix K).

The study found that income poverty (monthly household income contribution of garden club members) and consumption of seed stock held for next season tended to relate to each other ($\chi^2 = 22.469$, $df = 12$, $P = 0.033$) just as limiting portion size at meal times tended to be associated with monthly contributions to household income ($\chi^2 = 20.571$, $df = 12$, $P = 0.057$) (Appendix K). This means that those that had less income responded to food insecurity by consuming seed stock saved for the next planting season and limiting portion sizes at meals, implying that income is a necessary component or factor. Such factor helped households cope with stresses such as morbidity and mortality. This reflects that the higher the income, the greater the household capacity to withstand shocks such as morbidity and mortality. This is substantiated by the finding that consuming seed stock and reliance on less preferred and less expensive food also tended to

be related ($\chi^2 = 23.503$, $df = 16$, $P = 0.101$) (Appendix K), suggesting that when households resorted to consuming seed stock, households also chose to purchase less preferred and less expensive foods, and vice versa.

Similarly, Appendix K indicates that monthly contribution to household income significantly ($\chi^2 = 16.451$, $df = 12$, $P = 0.171$) tended to associate with borrowing food from friends or relatives, which meant that there was a high tendency that households without enough income borrowed food as a consumption coping strategy. Pretty often, for all income categories, there was a tendency for those with more income to borrow more. Thus borrowing food was a very common coping strategy in the Maphephetheni uplands. Appendix K shows that households that borrowed food from friends or relatives tended not to skip entire days without eating, but only where borrowing was low, households tended to skip entire day without eating ($\chi^2 = 17.525$, $df = 12$, $P = 0.131$). This relationship suggested that households were pushed deeper into poverty by debt repayments and as such would find it difficult to cope with morbidity and mortality showing a broad front of coping strategies.

Chi-Square analysis reflected that other coping strategies were not related to certain other expected behaviour. For example, households that relied on less preferred and less expensive foods were not significantly ($\chi^2 = 19.636$, $df = 16$, $P = 0.237$) associated with limiting portion size at meal times (Appendix K). Possibly, this is so because households applied purchase of less preferred and less expensive foods due to less income, as reported above, as a coping strategy which helped the households to avoid limiting portion size at meal times. Furthermore, there was a non-significant ($\chi^2 = 15.033$, $df = 12$, $P = 0.240$) relationship between buying food on credit and begging from neighbours or friends (Appendix K). This is possibly because of high borrowing as coping strategy in the Maphephetheni uplands.

In the next section, the focus is on direct and indirect costs of morbidity and mortality. This is useful in capturing a holistic picture of the socio-economic impacts of illness and death on women's coping strategies in the Maphephetheni uplands.

8.6 Direct and indirect cost of morbidity and mortality

In chapter two of this study, it was noted that one of the factors of household agricultural production that morbidity and mortality affects is the availability of “disposable cash income” (IFPRI, 2002; 2001:2; 1995) and that during illness, household financial resources may be diverted to pay for medical treatment and eventually to meet funeral costs (Roth, 2001: 39-50; Baier, 1997). Such financial resources may have otherwise been used to purchase agricultural inputs, such as occasional extra labour or complementary agricultural inputs such as new seed, fertiliser and pesticides.

In order to determine the economic impact of illness and death on households it was also necessary to include both the direct and indirect costs of morbidity and mortality. Direct costs included the cost of medical treatment, but excluded transport expenses required to reach health care facilities so as to receive treatment. In case of deaths, funeral costs represented another direct cost. In the case of illness, indirect costs included the loss of income to the ill person and to those persons caring for the ill, including both direct care and time spent accompanying the ill person on visits to healthcare facilities. When it came to mortality, indirect costs referred to the income loss to the persons caring for the deceased individual prior to their death, as well as the income loss to the household resulting from the death of the sick household member. The results suggest that the economic burden of illness on households affected by morbidity was more pronounced than would have been the case in non-affected households. This was such primarily because of the loss of income to the ill person and to the person that accompanied the sick person to the health care service rather than because of significant differences in direct costs or in the loss of income to the caregiver due to time spent caring for the sick person.

In terms of the evidence presented in chapter seven, the direct costs of morbidity to households were relatively low. This was so where unemployment levels were high, where household members were primarily cared for by household members with no direct loss of income, and where ill persons primarily used free or subsidised public health services. If, however, one was to put an economic value on the time of household labour spent on care giving instead of productive activities, the cost of illness would be higher. Similarly, if one was to put a market price to free or

subsidised health care, these estimates of the cost of morbidity would be undoubtedly substantially higher.

Returning to the cost of funerals, the average cost of funerals to affected households amounted to R1 080 (SD \pm 238.2) per annum of the 42 percent of households that reported a death in a household in 2004. The direct cost of a death consisted of funeral costs. Additionally, the largest share of indirect costs of mortality consisted of income losses to households resulting from the foregone earnings of the deceased. This suggests that death puts a greater financial burden on households than does illness, primarily because of the cost of funerals as well as the foregone earnings of the deceased particularly where the deceased was a pensioner or recipient of state grants, provider of earning remittances or a wage earner on top of funeral costs. From the group sustainable livelihoods analysis discussions, it was reported that funeral costs and loss of income represented the bulk of the burden of mortality on households in the Maphephetheni uplands. In the wake of HIV/AIDS, this finding suggests that expenditure on funerals (direct and indirect) could increase dramatically per household as the AIDS epidemic takes its toll.

On the one hand, unlike the estimates of the cost of illness, the cost of death to households remains relatively high even where unemployment levels were very high and household members were primarily cared for at home by relatives with no direct loss of income, and where free or subsidised public health care services were used. On the other hand, funeral costs per annum were relatively low compared to monthly total income per household member which averaged R111.22, R168.00 and R716.09 in 2003, 2004 and 2005, respectively while per garden club member the monthly total income averaged R252 and R764 in 2003 and 2004, respectively. Again, funeral cost estimates would be higher if one was to place an economic value on the time spent at funerals, slaughtering of animals such as goats, chickens and cattle and use of community garden produce for food during funeral ceremonies. It is also important to note that death affects not just the households in which death occurred, but also the whole community, considering community solidarity and obligation to attend funerals and observe mourning rituals. In the Maphephetheni uplands, weekends were spent at funerals disrupting farm and non-farm activities. The mourning period varies from two weeks to one year depending on who died.

Morbidity and mortality impact on women's subsistence agriculture-based livelihoods. The various findings of this study suggest that the impact of morbidity and mortality on women's coping strategies is substantial, especially when taking adequate account of the depletion of strong, capable and productive farm labour, loss of agricultural capital to pay for medical and funeral expenses and time spent caring for the sick and attending funerals. Direct and indirect effects of morbidity and mortality suggest that a link exists between asset bases and morbidity and mortality.

8.7 The linkages between assets and morbidity and mortality

Taking adequate consideration of the findings that have been presented and discussed above, it is evident that socio-economic impacts of morbidity and mortality combine to erode asset and resource bases of rural households who are already poor. On one hand, poverty increases vulnerability or susceptibility to illness, especially in the face of HIV. In this perspective, Whiteside (2001 & 2002) states that a lack of resources translates into unsafe sexual practices that could result in morbidity and mortality as a result of HIV. In turn, this is likely to move households into deeper poverty (Booyesen et al., 2004). In this study, it was noted that impacts of morbidity and mortality were substantial since depletion of resources, particularly human and financial assets compromised the livelihoods of already poor women. Morbidity and mortality clearly represented an extreme source of livelihood insecurity that required resources to mitigate impacts both at household and community levels. In this way, the burden of morbidity and mortality exposed already vulnerable households to further shocks (Desmond, 2001: 54-58; Poku, 2001: 191-204; Whiteside, 2002: 313-332), locking the poor households in a vicious cycle of poverty.

This study demonstrated that households experienced changes in income received from remittances, social grants and other sources of non-employment income over time, due largely to changes in household composition driven by illness and death. As inter-temporal changes in the burden of morbidity and mortality on households took place, income became volatile, particularly where the deceased were recipients of social grants or earners of any form of income prior to death or illness. This also means that loss of labour supply resulting from morbidity and mortality

was likely to cause household income to decline. Consequently, households affected by morbidity and mortality were likely to be poorer than before. This means that a link exists between asset base and morbidity and mortality in the Maphephetheni uplands.

8.8 Chapter summary

Chapter eight set out to discuss some of the social and economic impacts that morbidity and mortality have on subsistence agriculture-based livelihoods, and how rural households, particularly, women coped with shocks or stresses such as illness, death, and income poverty and food insecurity. It became evident that such impacts were mainly experienced on two farm production parameters: reduction of labour due to sickness and death; and a negative effect on availability of disposable cash income due to medical and funeral costs.

Another important finding of this study was that households in the Maphephetheni uplands were relatively poor and therefore found it more difficult to cope with impacts of illness and death than households with higher incomes. In this regard, this study suggested that households or communities with raised morbidity and mortality rates could experience greater variations in income levels than non-affected households or communities. This chapter highlighted the relatively important role of government grants in assisting households to cope with the impacts of morbidity and mortality or other shocks such as food insecurity.

Given the various impacts of morbidity and mortality, households devised ways of coping. The chapter, therefore, discussed specific household financial and consumption coping strategies alongside the importance of a strong asset base. A strong asset base was deemed to be critical to providing households with greater capacity to cope with illness, death and food insecurity. The study noted that in the Maphephetheni uplands the impact of morbidity and mortality was substantial since depletion of resources (due to illness and death), particularly human and financial assets compromised livelihoods of already asset poor households.

Finally, the chapter discussed the bi-directional and mutually reinforcing relationship between morbidity and mortality and food insecurity, and argued for increased efforts at developing

necessary resources to mitigate direct and indirect impacts on women's coping strategies, including community gardening. Chapter 9 highlights findings and conclusions of the study and proposes interventions at policy level and recommendations for further research opportunities.

CHAPTER 9: CONCLUSIONS AND RECOMMENDATIONS

This thesis set out to investigate the influence of morbidity and mortality on coping strategies among participating community garden club members and their households. Data was collected using an innovative mix of qualitative and quantitative research methodologies. Qualitative research methodologies included group sustainable livelihoods analyses. Quantitative methodologies included three annual household surveys conducted between 2003 and 2005. The coping strategy index was used to determine levels of food insecurity and understand how morbidity and mortality compromised household coping ability. Data was analysed using Chi-square tests, paired samples t-tests, frequency and descriptive statistics.

This chapter addresses three main aspects. First, it summarises the main findings of the research as guided by research questions (sub-problems). Second, conclusions are made and finally, policy recommendations and recommendations for further research opportunities are posed.

9.1 Summary of the study findings

This section presents a summary of study findings based on the five sub-problems formulated in chapter one and discussed in detail in chapters five to eight.

9.1.1 The role of community gardens in the Maphephetheni uplands

The study explored the influence of morbidity and mortality on women's coping strategies. Given the participation of the study sample in community gardens, analysis of the role of community gardens was important to reach conclusions about whether community vegetable gardens were a potentially important agricultural livelihood activity for rural communities such as in the Maphephetheni uplands or a coping strategy in times of stress and shocks such as morbidity and mortality. Therefore, to assess the role played by community gardens in rural livelihoods, the contribution to household income was explored.

Households diversified sources of income to supplement community gardening activities. Non-farm livelihood activities contributed more substantially to total household income than community gardens among study participants. Community gardening contributed less to total monthly household income than wages, social grants and small-scale enterprises. Even though low, the contribution of the community gardens to food security cannot be ignored considering the substantial number of households (about 32 percent of sample households) dependent on community gardens. Findings indicated that community gardens were themselves a coping strategy in the face of morbidity and mortality. Community gardens provided a risk aversion strategy and minimised risk by providing food and social and moral support for households facing hardships.

9.1.2 Roles and significance of women in livelihood activities

To determine the impact and effects of morbidity and mortality on coping strategies among women engaged in the community gardens, this study considered the role and significance of women in livelihood activities. Women's contributions to rural livelihoods were explored through involvement in farm-related and non-farm livelihood activities.

Community garden club members and other female household members were engaged in various tasks such as land preparation (ploughing), watering, planting, weeding, processing of basic food stuffs, harvesting, selling community garden produce and tending animals. Garden club and female household members undertook household chores such as caring for the sick, fuel and water collection, cleaning the house, washing clothes and cooking. These members were also engaged in small scale entrepreneurial activities such as mat weaving, selling traditional medicine and fuels, sewing, crocheting, broom making, block making and house repairing or building.

9.1.3 Changes and trends in morbidity and mortality

To determine the socio-economic burden that morbidity and mortality placed on women's coping strategies, this study took account of the changes and trends in morbidity and mortality. The study found that illness and death increased over the survey period. There were more sick garden

club and household members and more deaths in 2004 than in 2003. The costs of illness and funerals increased over the first two years of field research. Further analysis showed that the number of garden club members and households who depended on subsidised medication dropped from 86 percent of households in 2003 to 66.7 percent in 2004 despite increased illness and death and that more sick members used paid medical services in 2004 compared to 2003. Such decrease was partly due to household members' preference of purchased medication that was believed to be of better quality than government medical treatment.

Caring for the sick significantly increased between 2003 and 2004, suggesting that the increased number of sick people increased women's burden in terms of caring for the sick and as a result less time was spent on community gardening. Time spent on caring for the sick increased significantly over the first two years of research. The main causes of death were reported to be tuberculosis, diarrhoea, pneumonia and skin cancers.

9.1.4 Impacts of morbidity and mortality on women's coping strategies

To better understand how morbidity and mortality impacted on women's coping strategies among participating households, this study indicated that community garden activities had the potential to offset threats and decrease household vulnerability through provision of food and income. Food and income are needed to cushion households against morbidity and mortality. Community gardening was itself a risk aversion strategy. Community gardens provided social support networks.

Garden club members and their households had low income levels and few assets. There was a significant relationship between the personal condition of health of garden club and household members and household income per month. Such a relationship suggested that increased frequency of illness reduced income. Morbidity forced households to divert already low incomes into meeting medical costs. Similarly, frequency of deaths significantly correlated with total monthly household income, suggesting that increased frequency of death reduced household income by forcing households to divert incomes to funeral expenses. Due to low incomes, the most frequent financial coping strategy was borrowing, followed by use of savings (in cases

where people afforded savings through *stokvels*) and the sale of livestock and other assets (for those households that possessed assets). Households experienced reductions in income received from remittances, social grants and other sources of non-employment income due to changes in household composition as a result of illness and death through loss of labour. Asset ownership, morbidity and mortality were linked. Morbidity and mortality depleted household asset and resource bases, increasing vulnerability and susceptibility to illness and food insecurity through employment of erosive coping strategies. Migration as a coping strategy to increase incomes was not widely practised as the most saleable labour either became sick or died.

In terms of household consumption strategies, consuming seed (e.g., maize, beans and peas) was the most frequent strategy for coping with food insecurity followed by relying on less preferred and less expensive foods, limiting portion sizes at meal times and borrowing food from relatives or friends. More than 80 percent of sample households did not employ the more severe coping strategies such as skipping entire days without eating and feeding working household members at the expense of non-working members. Around twenty percent of households applied severe coping strategies such as skipping entire days without eating, suggesting the need for grant income to buy food for household members.

Household income and erosive consumption coping strategies were significantly correlated at varying levels of significance to increased caring for the sick, illness and medical and funeral costs among garden club members. If time spent on caring for the sick and attending funerals, traditional funeral practices such slaughtering of animals (such as goats and sheep) and foregone earnings of the deceased were given monetary value, the costs of morbidity and mortality could be substantially higher than those reported in this study.

Overall, morbidity and mortality negatively impacted on community gardening by hindering the ability of garden club members to effectively and efficiently undertake community garden and non-farm activities. Morbidity and mortality reduced farm and non-farm labour due to sickness and death, and had adverse effects on household income due to increased medical and funeral costs.

9.2 Conclusions

Seven conclusions are drawn. First, while community gardens have the potential to be a key basis for rural livelihoods and coping strategies to cushion the effects of morbidity and mortality in the Maphephetheni uplands, non-farm activities are more key to rural livelihoods. Community gardens and non-farm livelihood activities have the potential to yield income and support rural livelihoods among study participants. Diversification of livelihoods is an important component of rural livelihood security because the greater the diversity, the greater the capacity to withstand shocks. Diversification reduces vulnerability, but extreme diversification is an indication of desperation and is likely to increase women's workloads.

Second, it is concluded that improvement in farm and non-farm livelihood sectors could lead to greater resilience to morbidity and mortality through provision of household income, food and social support needed for coping with adverse situations. Given the large number of households (approximately 32 percent) who depended on subsistence agriculture as a main livelihood activity, the importance of community gardens cannot be underestimated. However, promoting non-farm activities has value in easing shocks and cushioning the effects of morbidity and mortality on women's coping strategies if tasks allocated to various activities such as community gardening and non-farm activities and household chores (for example, fuel and water collection) are equally distributed across household members.

Third, this study concludes that rural women make an important contribution to rural livelihoods and are critical to household food security and rural livelihoods. Women should be a significant target to any intervention aimed at tackling the social and economic impacts of morbidity and mortality on coping strategies. However, women's contributions to subsistence agriculture are compromised by morbidity and mortality and result in considerable social and economic stresses on women. Women carry the burden of care of the sick in addition to other livelihood activities.

Fourth, in the wake of the HIV/AIDS epidemic, morbidity and mortality are likely to place a severe socio-economic burden on women. Morbidity and mortality disrupt community and non-community garden activities resulting in low crop production due to reduced labour supply,

increased health care and funeral costs, increased care-giving and low incomes which in turn minimise the ability of households to cope with future shocks and stresses. Morbidity and mortality reduce the effectiveness of coping strategies. Fifth, increased trends and changes in morbidity and mortality are likely to push households deeper into food insecurity, given the adoption of erosive coping strategies needed to pay for medical treatment and funerals.

Sixth, a strong asset and resource base is important in providing households with greater capacity to cope with illness, death and food insecurity. Assets are needed to cope with the effects of morbidity and mortality. Depletion of already scarce resources, particularly human and financial capital, due to illness and death, compromises the livelihoods of already (asset) poor households. Finally, the study concludes that although government social grants were a useful safety net in assisting households to cope with the impacts of morbidity and mortality or other shocks such as food insecurity, government grants could be a disincentive for community gardening (agriculture) and engagement in or development of long-term livelihood strategies. Social grants may help households build resilience to shocks, but discourage involvement in community gardening and non-farm activities with possible negative implications for future resilience.

9.3 Recommendations

This thesis suggests a need to address the effects of morbidity and mortality by providing women with the necessary support to increase resilience to shocks. The following recommendations identify policy and practical interventions that could contribute to building resilience to the effects and impact of morbidity and mortality on households and, particularly on women's coping strategies.

9.3.1 Community gardens and non-farm livelihood activities

Government, non-governmental organisations (NGOs) and community-based organisations (CBOs) need to pay more attention to the promotion of community garden activities and small scale non-farm enterprises, particularly activities and enterprises linked to the subsistence agricultural sector. Such promotion could support women's coping strategies by increasing

household resilience through linking women to markets for farm and non-farm products. Government and non-governmental organisation's strategies to make community gardening more productive could consider providing necessary agricultural inputs in the form of seed packs, irrigation systems and fencing to protect against encroachment by animals. Given that community gardens were themselves a coping strategy, it is crucial for governments and non-governmental organisations to provide financial and human skills to rural agricultural initiatives through establishment of a community multi-purpose centre where rural people can learn agricultural and entrepreneurial skills to improve rural livelihoods that would in turn help households effectively cope with stresses and shocks such as food insecurity, illness and death.

Need also exists for governments and non-governmental organisations to promote non-farm enterprises through various community driven income generating projects. For example, block-making and water and sanitation projects in the Maphephetheni uplands played an important role in giving access to casual work and self-employment, which in turn provided income needed for caring for the sick. However, government should take adequate consideration of the fact that promotion of non-farm livelihood activities could likely increase women's workload, and therefore the community-based structures (for example, the chief and local councillors) need to put in place mechanisms that address labour constraints. Some of the mechanisms will be presented below.

Access to credit, although potentially erosive in nature, could increase household resilience to shocks and stresses by helping households maintain household economic viability. Similarly, promotion of savings would be critical to women and their households, helping cope with livelihoods shocks. Savings could strengthen safety nets by providing access to income during times of hardships and building household assets. Use of savings prevents households from applying severe coping strategies such as selling household assets. *Stokvels* and burial clubs/societies were the most important sources of savings. The existence of *stokvels* and burial clubs to cover the costs incurred through illness or funerals/burials can reduce the impact of morbidity and mortality on women's coping strategies. Participation in formal or informal savings or insurance groups reduces the need to turn to erosive coping strategies such as selling assets. It is recommended that local micro savings programmes be established to pay attention to

changes and trends in morbidity and mortality, and assist households improve or establish small scale enterprises.

9.3.2 Improvement in access to government grants as social protection

About 40 percent of total monthly household income was sourced from social grants. It is important for government institutions to be aware of enhanced susceptibility to risk of infection caused by poverty and inequality. In the wake of HIV/AIDS, morbidity and mortality render households destitute and leave weaker household members vulnerable, having lost productive assets. Strengthening existing internal and external safety nets is important. For example, greater access to social grants could help households become more resilient to the effects of illness or death on women's coping strategies.

However, social security grants should be administered with caution in order not to undermine the livelihood activities of rural households such as those in the Maphephetheni uplands. Social grants need to be dispensed as part of an integrated package of services such as income generating activities, vocational skills training and asset replacement that aim to empower rural households through both formal and informal strategies/mechanisms towards greater equity without creating dependency syndromes and discouraging agricultural production. Government efforts in providing social grants should go beyond economic protection to social protection interventions such as seed and input packages, food-for-work and cash-for-work schemes. Social protection (that could be protective, preventive, promotive and transformative in type and measure) focuses on livelihood building, and therefore has the potential to contribute to growth and support social and economic goals (rights, empowerment and social equity) of vulnerable households.

9.3.3 Addressing the effects of morbidity and mortality

It is clear that it is necessary to minimise the immediate effects and impact of illness and death on women's coping strategies. Immediate consequences of illness and death, such as loss of labour, high costs of medical care and funerals can trigger a downward spiral into food insecurity.

Government departments need to note that coping strategies depend critically on labour availability, skill, knowledge and experience. Labour scarcity resulting from morbidity and mortality means that women face increasing difficulties in pursuing labour-intensive coping strategies such as community gardening, income generating activities (labouring for money) and collecting wild foods. Need exists to devise strategies aimed at alleviating the loss of labour by introducing labour saving technologies. For example, introduction or promotion of energy saving stoves could reduce the daily task of firewood collection. Similarly, introduction of water harvesting techniques and agricultural practices that are less labour intensive such as lighter and better quality hand tools, management of soil cover in order to suppress weeds could also reduce women's excessive workload. All of these technology interventions will require adequate training, technical assistance and a supportive infrastructure. Loss of agricultural skills, experience, knowledge and practices through death of community garden members could be addressed through establishment of a skills training centre and provision of agricultural extension services for community members.

9.4 Summary of further research opportunities

While the findings of this study offer valuable information for decision-makers, a number of issues inevitably still need to be addressed. Data was collected through use of group sustainable livelihoods analyses and questionnaires. It was assumed that the questions were unambiguously phrased and that translation from English into isiZulu by research assistants did not change the meaning or interpretation of the questions or terms/concepts. Accurate translation of coping strategies and sustainable livelihoods analysis concepts and terminology into isiZulu is wordy, and requires a thorough knowledge of the isiZulu language and a sufficient command of food security conceptual understanding and coping strategies. Measures to ensure response reliability included use of a standardised questionnaire for data collection, promised confidentiality of responses and findings, and use of female post-graduate research assistants. Future research could consider use of research assistants with a thorough knowledge of isiZulu concepts and a profound conceptual understanding of sustainable livelihoods analysis framework and coping strategies.

The study could have included women engaged in home gardening activities to better understand the role of subsistence agriculture as a whole in coping with the effects of morbidity and mortality in the Maphephetheni uplands. Further research should also consider continuing and expanding the longitudinal study to include community garden club members from both the Maphephetheni uplands and lowlands in order to understand the relative importance of various causal factors that impact on coping strategies and food security of households affected by HIV/AIDS related morbidity and mortality. Such a study could also focus on women engaged in community gardens and non community garden members to compare how morbidity and mortality influence the coping strategies of women from two different groups.

This study did not specifically investigate HIV/AIDS due to ethical constraints and its effects on coping strategies amongst the garden club members and their households. It is therefore recommended that longitudinal (panel) studies be carried out to gain better understanding of the impact of morbidity and mortality and confirming if the findings relate directly to HIV.

There is need for further local level case studies that investigate the impact of grants as well as other forms of social protection and safety nets on local level livelihoods. In this respect, special attention could be directed to the specific role of government social grants in terms of targeting of assistance and exploring further the extent to which current interventions help households cope with the effects of related morbidity and mortality.

In summary, the preceding chapters explored the impact of morbidity and mortality on women's coping strategies among community garden club members and their households in the Maphephetheni uplands. Given the lack of research on South African rural women's coping strategies, this study has contributed to understanding the impact of morbidity and mortality on women's coping strategies. Such understanding is crucial to developing supportive interventions to address the consequences of illness and death, and to identify means for assisting households to cope with the effects of increasing health and funeral costs to protect livelihoods in the face of low household income and reduced household labour potential.

REFERENCES:

ADEY, S, 1997. *Community Garden Plant Disease Survey*. Unpublished Report. Department of Microbiology and Plant Pathology, University of Natal: Petermaritzburg.

AFRICAN NATIONAL CONGRESS, 1994. *The Reconstruction and Development Programme*. Braamfontein: Umanyano.

ALAMGIR, M & ARORA, P, 1991. *Providing Food Security for All*. New York: New York University Press.

ALIBER, M, 2001. *Study of the Incidence and Nature of Chronic Poverty and Development Policy in South Africa: an overview*. Programme for Land and Agrarian Studies, School of Government, University of the Western Cape: Cape Town.

ANNAN, K, 2002. In Africa, AIDS has a woman's face. Excerpt from *The New York Times*, 29 December.

APPLETON, J, 2000. At my age I should be sitting under that tree: the impact of AIDS on Tanzanian lakeshore communities. *Gender and Development*, 8 (2): 19-27.

ARMSTRONG, D, 2000. A Survey of Community Gardens in Upstate New York: implications for health promotion and community development. *Health and Place*, 6: 319-327.

ARMA-KLEMESU, M, RIKIMARU, T, KENNEDY, D O, HARRISON, E & KIDO, Y, 1995. Household food security, food consumption patterns, and the quality of children's diet in a rural northern Ghana community. *Food and Nutrition Bulletin*, 16 (1): 1-7.

BACHMANN, M & BOOYSEN, F, 2003. Health and Socio-economic Impact of HIV/AIDS on South African Households: cohort study. *Bio-Medical Central Public Health*, 3: 14. [WWW document] URL: www.biomedicalcentral.com/1471-2458/3/14 (Accessed 1 July 2005).

BAIER, E, 1997. *The Impact of HIV/AIDS on Rural Households/Communities and the Need for Multisectoral Prevention and Mitigation Strategies to Combat the Epidemic in Rural Areas*. Rome: Food and Agriculture Organisation.

BARNETT, A & RUGALEMA, G, 2001. *Health and Nutrition in Developing Countries: HIV/AIDS*. Focus 5, Brief 3 of 11. Washington, DC: International Food and Policy Research Institute.

BARNETT, T & BLAIKIE, P, 1992. Simple Methods for Monitoring the Socio-Economic Impact of AIDS: lessons from research in Uganda and Kenya. *African Urban Quarterly*, 7 (3-4): 268-272.

BARNETT, T & BLAIKIE, P, 1992. *AIDS in Africa: its present and future impact*. New York: Guifford Press.

BARNETT, T & WHITESIDE, A, 2002. *AIDS in the Twenty-first Century: disease and globalisation*. Basingstoke: Macmillan Palgrave.

BARNETT, T & WHITESIDE, A, 1996. Locating the Economic Impact of HIV/AIDS. *AIDS Analysis Africa (Southern Africa edition)*, 7 (1): 3-4.

BARNETT, T & HALSWIMMER, M, 1995. *The Effects of HIV/AIDS on Farming Systems in Eastern Africa*. Rome: Farm Management and Production Economics Service, Food and Agriculture Organisation.

BARRACLOUGH, S L, 1991. *An End to Hunger? The social origins of food strategies*. London: Zed Books.

BAYLIES, C, 2002. The impact of AIDS on rural households in Africa: a shock like any other? *Development and Change*, 33: 611-32.

BEAUCHAMP, T L & CHILDRESS, J F, 1994. *Principles of Biomedical Ethics* Fourth edition. New York: Oxford University Press.

BEBBINGTON, A, 1999. Capitals and capabilities: a framework for analysing peasant viability, rural livelihoods and poverty. *World Development*, 27 (9): 2021-2044.

BHORAT, H, LEIBBRANDT, M, MAZIYA, M, VAN DER BERG, S & WOOLARD, I, 2001. *Fighting Poverty: labour markets and inequality in South Africa*. Cape Town: University of Cape Town Press.

BOHLE, H G, DOWNING, T E & WATTS, M, 1994. Climate change and social vulnerability: the sociology and geography of food insecurity. *Global Environmental Change*, 4 (1): 37-48.

BONTI-ANKOMAH, S, 2001. *Addressing food insecurity in South Africa*. Paper presented at the SARPN Conference on Land Reform and Poverty Alleviation in Southern Africa, Pretoria, 4-5 June.

BOOYSEN, F R, BACHMANN, M, MATEBESI, Z & MEYER, J, 2004. *The socio-economic impact of HIV/AIDS on households in South Africa: pilot study in Welkom and Qwaqwa, Free State Province*. Final Report for USAID on Economic Impact of HIV/AIDS in South Africa, University of Free State, Centre for Health Systems Research & Development.

BOOYSEN, F R, 2003. *Chronic and transitory poverty in the face of HIV/AIDS related morbidity and mortality: evidence from South Africa*. Paper presented at International Conference on Chronic Poverty and Development Policy, Chronic Poverty Centre, University of Manchester, Manchester, 7-9 April.

BOOYSEN, F R, VAN RENSBURG, BACHMANN, M, ENGELBREICHT, STEYN, F & MEYER, K, 2002. *The socio-economic impact of HIV/AIDS on households in South Africa: pilot study in Welkom and Qwaqwa, Free State Province*. Unpublished Report for USAID on

Economic Impact of HIV/AIDS in South Africa, University of Free State, Centre for Health Systems Research & Development.

BOS, F & LEUTSCHER, M, 1995. *AIDS in the Family? Show you care! (I AIDS Ngekhaya?: bana lo mlandu): a study on home care for AIDS patients in Umzingwane District, Zimbabwe.* Wageningen: Wageningen Agricultural University.

BRABY, Undated. *KwaZulu-Natal: A beach, berg and bush bonanza.* Pietermaritzburg: Braby.

BRESLIN, E D & DELIUS, P, 1997. *A Proper Household: exploring household and community dynamics in South Africa.* Participatory Learning and Action (PLA) Notes CD Rom 1988-2001. London: International Institute for Environment and Development.

CARE & WFP, 2003. *The Coping Strategies Index: Field Methods Manual.* Nairobi: Cooperation for Assistance and Relief Everywhere and World Food Programme.

CARNEY, D, 1998. Implementing the sustainable rural livelihood approach. In Carney, D (ed), *Sustainable Rural Livelihoods: what contribution can we make?* London: Department for International Development, pp.3-23.

CARTER, M R & MAY, J, 1997. *Poverty, livelihood and class in rural South Africa.* Department of Agricultural and Applied Economics, University of Wisconsin, Madison. Staff Paper Series No. 408, pp.1-32.

CHAMBERS, R, 1998. *Whose Reality Counts?* Southampton Row: Intermediate Technology Publications.

CHAMBERS, R, 1989. Editorial Introduction: vulnerability, coping and policy. *IDS Bulletin*, 20 (2): 1-7.

CHAMBERS, R & CONWAY, D, 1992. *Sustainable rural livelihoods: practical concepts for the 21st century*. Development Studies Discussion Paper 296, University of Sussex, Brighton: IDS Publications.

CHRISTIAENSEN, L & BOISVERT, R, 2000. *On measuring household food vulnerability: case evidence from northern Mali*. Working Paper. Department of Agricultural, Resource, and Managerial Economics, Cornell University: New York.

CORBETT, J, 1988. Famine and household coping strategies. *World Development*, 16 (9): 1099-1112.

CRAWLEY, M, 2001. Cribs and hugs for Africa's AIDS orphans. *Christian Science Monitor*, 93 (173): 1-7.

CROSS, C, 2001. Sinking deeper down: HIV/AIDS as an economic shock to rural households. *Society in Transition*, 32 (1): 133-147.

DAVIES, S, 1996. *Adaptable Livelihoods: coping with food insecurity in the Malian Sahel*. London: Macmillan.

DAVIES, S, 1993. Are coping strategies a cop out? *IDS Bulletin*, 24 (4): 60-72.

DEACON, R & FIREBAUGH, F, 1988. *Family Resource Management and Application*. Second Edition. Boston: Ally and Bacon, Inc.

DECOSAS, J, KANE, F, ANARFI, J F, SODJI, K D R & WAGNER, H U, 1995. Migration and AIDS. *Lancet*, 346: 86-828.

DE GRUCHY, S, 2003. *The contribution of universities to sustainable livelihoods*. Unpublished Draft Paper. School of Theology and Religion, University of Natal: Pietermaritzburg.

DELGADO, C L, 1998. *Sources of growth in smallholder agriculture in sub-Saharan Africa: the role of vertical integration of smallholders with processors and marketers of high value-added items*. Paper presented at the Inter-Conference Symposium of the International Association of Agricultural Economists, Badplaas, South Africa, August 10-16.

DELGADO, C L & SIAMWALLA, A, 1997. *Rural economy and farm income diversification in developing countries*. Paper presented at a Plenary Session of the XXIII International Conference of Agricultural Economists, Sacramento, August 10-16.

DEPARTMENT FOR INTERNATIONAL DEVELOPMENT (DFID), 2003. *The socio-economic Impact of Commercial Agriculture on Rural Poor and Other Vulnerable Groups*. Lusaka: Department for International Development.

DFID, 2002. *Better livelihoods for the poor: the role of land policy*. Issues Paper (Discussion Draft). London: Department for International Development.

DFID, 2000. Framework: Introduction. *Sustainable Livelihoods Guidance Sheets*. [WWW document] URL: http://www.livelihoods.org/info/gudance_sheets_pdfs/section2.pdf (Accessed 20 May 2003).

DFID, 1998. *Sustainable Rural Livelihoods: what contribution can we make?* London: Department for International Development.

DEPARTMENT OF HEALTH, 2005. *South African National HIV and Syphilis Sero-Prevalence Survey of Women Attending Public Antenatal Clinics in South Africa*. [WWW document]. URL: <http://www.doh.gov.za/docs/hiv-syphilis-f.html> (Accessed 21 March, 2005).

DEPARTMENT OF HEALTH, 2004. *South African National HIV and Syphilis Sero-Prevalence Survey of Women Attending Public Antenatal Clinics in South Africa*. [WWW document] URL: <http://www.doh.gov.za/docs/2004hiv-syphilis-f.html> (Accessed 21 March, 2005).

DEPARTMENT OF HEALTH, 2000. Ethical Considerations for HIV and AIDS Clinical and Epidemiological Research. HIV/AIDS/STD Directorate. Pretoria: Department of Health.

DERCON, S, BOLD, T, DE WEERDT, J & PANKHURST, A, 2004. Group-based funeral insurance in Ethiopia and Tanzania. Working Paper. Paris: Organisation for Economic Co-operation and Development (OECD).

DERCON, S & DE WEERDT, J, 2002. Risk-sharing networks and insurance against illness. Working Paper Series 2002-17. Paris: Centre for the Study of African Economies.

DESMOND, D, 2001. Joint epidemics: poverty and AIDS in sub-Saharan Africa. *Harvard International Review*, Fall: 54-58.

DEVEREUX, S, 2002. Can social safety nets reduce chronic poverty? *Development Policy Review*, 20 (5): 657-675.

DEVEREUX, S & MAXWELL, S, 2001. Introduction. In Devereux, S & Maxwell, S (Eds), *Food security in sub-Saharan Africa*. Pietermaritzburg: University of Natal Press, pp.1-12.

DEVEREUX, S, 1993. Goats before ploughs: Dilemmas of household response sequencing during food shortages. *IDS Bulletin*, 24 (4): 52-59.

DE WAAL, A & WHITESIDE, A, 2003. New Variant Famine: AIDS and Food Crisis in Southern Africa. *The Lancet*, 362: 1234-37.

DE WAAL, A, 2002. *New Variant Famine in Southern Africa*. Presentation for SADC VAC meeting, Victoria Falls, 17-18 October 2002. [WWW document] URL: www.earthinstitute.columbia.edu/cgsd/documents/de_waal_lancetarticle.pdf (Accessed 13 March 2005).

DE WAAL, A, 1989. *Famine that Kills*. Oxford: Clarendon Press.

DONAHUE, J, 1998. *Community-based economic support for households affected by HIV/AIDS*. Discussion Paper on HIV/AIDS Care and Support No 6, Health Technical Services Project: Arlington.

DORRINGTON, R, BRADSHAW, D, JOHNSON, L & BUDLERNDER, D, 2005. *The demographic impact of HIV/AIDS in South Africa: national indicators for 2004*. Technical Report. Cape Town: Centre for Actuarial Research, South African Medical Research Council & Actuarial Society of South Africa.

DORRINGTON, R, BOUNE, D, BRADSHAW, D, LAUBSCHER, R & TIMAEUS, I M, 2001. *The impact of HIV/AIDS on adult mortality in South Africa*. Technical Report. Cape Town: Burden of Disease Research Unit, Medical Research Council.

DREZE, J & SEN, A, 1989. *Hunger and Public Action*. Oxford: Clarendon Press.

DRIMIE, S, 2002. *The impact of HIV/AIDS on rural households and land issues in southern and eastern Africa*. A Background Paper prepared for the Food and Agricultural Organisation, Sub-Regional Office for Southern and Eastern Africa. Pretoria: Human Sciences and Research Council.

DU GUERNY, 2002. *Agriculture and HIV/AIDS*. South East Asia: UNDP South East Asia HIV and Development Project.

DU TOIT, A & ZIERVOGEL, G, 2004. Vulnerability and food insecurity: background concepts for informing the development of a national FIVIMS for South Africa. FIVIMS Working Paper.

ECKMAN, K, 1999. *Linkages between participatory rural appraisal (PRA) and technological intervention: Poultry as a tool in poverty eradication and promotion of gender equality*. Proceedings of Workshop. Denmark: Tune Lanboskole. [WWW document] URL: <http://www.husdyr.kvl.dk/htmphp/tune99/22-Eckman.htm> (Accessed 10 November 2003).

ECKMAN, K, 1994. *Rural Households and Sustainability: integrating environmental and gender concerns into home economics curricula*. Rome: Food and Agriculture Organisation.

EDGAR, E, 2000. KwaZulu-Natal, MS Encarta Online Encyclopaedia. [WWW document] URL: <http://encarta.msn.com@1997-2000Microsoft> (Accessed 29 August 2004).

ELLIS, F, 2002. *Livelihoods and Rural Poverty Reduction in Malawi*. LADDER Working Paper No. 17, July.

ELLIS, F, 2000. *Rural Livelihoods and Diversity in Developing Countries*. Oxford: Oxford University Press.

ELLIS, F, 1999. *Rural livelihood diversity in developing countries: evidence and policy implications*. ODI Natural Perspectives, No. 40. London: The Overseas Development Institute.

ELLIS, F, 1998. Household strategies and rural livelihood diversification. *Journal of Development Studies*, 38 (1): 1-38

ELLIS, F, 1996. Postdiagnosis mobility of people with AIDS. *Environment and Planning*, 28: 999-1017.

ENERGY RESEARCH INSTITUTE, 1984. *Energy for underdeveloped areas*. Conference Proceedings. Energy Research Institute, University of Cape Town: Rondebosch.

FARRINGTON, J, CARNEY, D, ASHLEY, C & TURTON, C, 1999. Sustainable livelihoods in practice: early application of concepts in rural areas. *ODI Natural Resource Perspectives*, No. 42. London: The Overseas Development Institute.

FOOD AND NUTRITION TECHNICAL ASSISTANCE (FANTA), 2000. *Potential uses of food aid to support HIV/AIDS mitigation activities in sub-Saharan Africa*. Draft Paper. Washington, DC: Academy for Educational Development.

FOOD AND AGRICULTURE ORGANISATION (FAO), 2004. *Socio-economic analysis and policy implications of the roles of agriculture in developing countries*. Summary Report on Roles of Agriculture Project. Rome: Food and Agriculture Organisation.

FAO, 2002. *The state of food insecurity in the world 2002*. Final Report. Rome: Food and Agriculture Organisation.

FAO, 2001. *AIDS threatens African agriculture*. Technical Report. Rome: Food and Agriculture Organisation.

FAO, 2000. *World agriculture towards 2015/2030*: Technical Interim Report. Rome: Food and Agriculture Organisation.

FAO, 1999. FAOSTAT Databases. Rome: Food and Agriculture Organisation. [WWW document] URL: <http://apps.fao.org/default.htm> (Accessed 14 May 2004).

FAO, 1998. *The State of Food and Agriculture*. Rome: Food and Agriculture Organisation.

FAO, 1997. *FAO and socio-economic impact of HIV/AIDS on agriculture*. World Food Summit Report. Rome: Food and Agriculture Organisation.

FAO, 1995. *The effects of HIV/AIDS on farming systems in eastern Africa*. FAO Farm Management and Production Economics Service. Report of Technical workshop. Rome: Food and Agriculture Organisation.

FAO & SUSTAINABLE DEVELOPMENT OF RURAL ECOSYSTEMS (SDRE), 2002. *Integrated support to sustainable development and food security programme: HIV/AIDS focus*. Technical Report. Rome: Food and Agriculture Organisation.

FOOD SECURITY WORKING GROUP (FSWG), 1997. *Food security policy for South Africa*. A Discussion Document for the Department of Agriculture and Land Affairs. Pretoria: National Department of Agriculture.

GARDNER, B, 2005. Causes of rural economic development. In Colman, D and Vink, N (eds.), *Reshaping agriculture's contribution to society*. Proceedings of the 25th International Conference of Agricultural Economists, Durban, 16-22 August.

GEIER, G, 1995. *Food Security Policy in South Africa between Disaster Relief and Structural Adjustment: reflections on the conception and effectiveness of policies, the case of Tanzania*. London: Frank Cass.

GILLES, P, TOLLEY, K & WOLSTENHOLME, J, 1996. Is AIDS a Disease of Poverty? *AIDS Care*, 8 (3): 351-363.

GILLESPIE, S, 1989. Potential impact of AIDS on farming systems: a case study from Rwanda. *Land Use Policy*, 6 (4): 301-312.

GILLESPIE, S, HADDAD, L & JACKSON, R, 2001. *HIV/AIDS, food and nutrition security: impacts and actions*. Paper prepared for the 28th Session of the ACC/SCN Symposium on Nutrition and HIV/AIDS. Washington, DC and Rome: International Food and Policy Research Institute and World Food Programme.

GITTING, J P, 1990. *Household food security and the role of women*. World Bank Discussion Paper. Washington, DC: World Bank.

GITTINGER, J P, CHERNICK, S, HOSENTEIN, N R & SAITER, K, 1990. *Household food security and the role of women*. World Bank Discussion Paper, 96, Washington, DC: World Bank.

GOLDMAN, I, CARNEGIE, J, MARUMO, M, MUNYORO, D, KELA, E, NTONGA, S &

GOVERNMENT COMMUNICATIONS INFONAUTICS CORPORATION (GCIC), 2000. *The nine provinces*. [WWW document] URL: <http://www.encyclopaedia.com/articles/12109.html> (Accessed 10 October 2006).

GREEN, J M, WILSON, M & CARWOOD, W, 2000. Maphephethe rural electrification (PV) programme: the constraints on the adoption of solar home systems. *Development Southern Africa*, 18 (1): 19-30.

GREEN, J M & ERSKINE, S, 1999. Solar (PhotoVoltaic) systems, energy use and business activities in Maphephethe, KwaZulu-Natal. *Development Southern Africa*, 16 (2): 221-223.

GREEN, J M & ERSKINE, S, 1998. *An energy audit of Maphephethe: assessing present energy usage patterns as a precursor to the introduction and expansion of alternative energy resources*. Final Report for the Norwegian University of Science and Technology: Oslo.

GUIJT, I, 1998. *Participatory Monitoring and Impact Assessment of Sustainable Agriculture Initiatives*. London: International Institute for Environment and Development.

GUPTA, G R, 2000. *Gender, sexuality and HIV/AIDS: the what, the why and the how*. Plenary address prepared for the 13th International AIDS Conference organised by the International Centre for Research on Women, Durban, South Africa, 9-14 July.

GUTHRIE, T, 2002. Family Social Security Benefits in South Africa. *Social Dynamics*, 28 (2): 122-146.

HADDAD, L & GILLESPIE, S, 2001. Effective food and nutrition policy responses to HIV/AIDS: what we know and what we need to know. *Journal of International Development*, 13: 487-511.

HEALTH ECONOMICS AND HIV/AIDS RESEARCH DIVISION (HEARD), 2002. HIV/AIDS Statistics [WWW document]. URL:

http://www.und.ac.za/und/heard/Stats/HIVpercent20AIDSpercentstatistics_updatedpercent20Augpercent2002.pdf (Accessed on 20 March 2003).

HENDRIKS, S L, KIRSTEN, J & VINK, N, 2006. The effect of institutions and policies on food security and rural development in South Africa. *Journal of Economic Development*, 2 (1): 82-113.

HENDRIKS, S L, 2003. The potential for nutritional benefits from increased agricultural production in rural KwaZulu-Natal. *South African Journal of Agricultural Extension*, 32: 28-44.

HENDRIKS, S L & KIAMBA, J, 2003. *The impact of illness on rural household resources: evidence from Umbumbulu, KwaZulu-Natal*. Unpublished Paper. Food Security Programme, University of KwaZulu-Natal: Pietermaritzburg.

HENDRIKS, S L, 2002. *Expenditure Elasticities and Growth Linkages for Rural Households in Two Study Areas of KwaZulu-Natal*. Unpublished PhD Thesis. Department of Agricultural Economics, University of Natal: Pietermaritzburg.

HOPE, K R, 1999. *AIDS and Development in Africa: a social science perspective*. London: Harworth Press.

HUSSAIN, M N, 1991. Food security and adjustment programmes: the conflict. In: Maxwell, S, (ed.). *To Cure All Hunger: food policy and food security in Sudan*. London: Intermediate Technology Publications.

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE, 2002. *Future options for rural Africa: IFPRI joins USAID to strategise on investment in agriculture in rural Africa*. [WWW document]. URL: http://www.ifpri.org/themes/fora/fora_webarticle.htm (Accessed 25 May 2004).

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE (IFPRI), 2001. *Rural Poverty Report 2001. The Challenge of Ending Rural Poverty*. New York: Oxford Press.

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE (IFPRI), 1995. *A 2020 vision for food, agriculture, and the environment: the vision, challenge and recommended action*. IFPRI Assessment Paper. Washington, DC: International Food Policy Research Institute.

INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT (IFAD), 2001. *Rural Poverty Report 2001: the challenge of ending rural poverty*. New York: Oxford Press.

JAYNE, T, VILLARREAL, M, PINGALI, P & HEMRICH, G, 2004. *Interactions between the agricultural sector and the HIV/AIDS pandemic: implications for agricultural policy*. Working Paper No. 04-06. Rome: Agricultural and Development Economics Division, Food and Agriculture Organisation.

JOHNSON, D, 1996. Poverty Lines and the Measurement of Poverty. *Australian Economic Review*, 96 (1):110-126.

JOHNSON, R, MANDER, J & MURPHY, C, 1991. *A resource assessment of the Ngcolosi, Maphephethe, Nyuswa, Embo, Qadini and Khumalo tribal areas*. Institute of Natural Resources Investigation Report No. 51, Institute of Natural Resources: Pietermaritzburg.

KENNEDY, E & HADDAD, L, 1992. Food Security and Nutrition, 1971-1991: lessons learned and future priorities. *Food Policy*, 17 (1): 2-22.

KONGSIN, S & WATTS, C H, 2000. *Conducting a household survey on economic impact of chronic HIV/AIDS morbidity in rural Thailand: methodological issues*. Unpublished Paper presented at the AIDS and Economics Symposium, Durban, 7-8 July.

KUTZNER, P L, 1991. *World Hunger: a reference handbook*. Santa Barbara: ABC-Clio.

- KUZWAYO, P, 1994. Household food security. *Welfare Focus*, 29.
- LAIER, J K, 1996. *Gender, Household Food Security and Coping Strategies: an annotated bibliography*. Brighton: University of Sussex, Institute of Development Studies.
- LEEDY, P D, 1997. *Practical Research: planning and design*. New Jersey: Prentice Hall.
- LEICHENKO, R & O'BRIEN, K, 2002. The Dynamics of rural vulnerability to global change. *Mitigation and Adaptation Strategies for Global Change*, 7 (1): 1-18.
- LEROY, J L, VAN ROOYEN, J D, D' HAESE, L & DE WINTER, A, 2001. A quantitative determination of the food security status of rural farming households in Northern Province of South Africa. *Development Southern Africa*, 18 (1): 5-17.
- LOEWENSON, R & WHITESIDE, A, 1997. *Social and economic issues of HIV/AIDS in Southern Africa*. Harare: Southern Africa AIDS Information Dissemination Service.
- LUCAS, C A, 1996. *An analysis of HIV/AIDS programmes in KwaZulu-Natal*. Durban: University of Natal, Centre for Health and Social Studies.
- LURIE, M, 2000. Migration and AIDS in southern Africa: a review. *South Africa Journal of Science*, 96: 343-347.
- MACHETHE, C L, MOLLEL, N M, AYISI, K, MASHATOLA, M B, ANIM, F D K & VANASCHE, F, 2004. *Smallholder irrigation and agricultural development in the Olifants River Basin of Limpopo Province: management transfer, productivity, profitability and food security issues*. Unpublished Report to the Water Research Commission on the Sustainable Local Management of Smallholder Irrigation in the Olifants River Basin of Limpopo Province Project. Water Research Commission: Pretoria.

MACHETHE, C L, 2004. *Agriculture and poverty in South Africa: can agriculture reduce poverty?* Unpublished Paper presented at the Overcoming Underdevelopment Conference held in Pretoria, 28-29 October.

MACLACHLAN, M & KUZWAYO, P, 1997. *Bold choices: making the South African nutrition strategy work*. Development Paper 128. Randburg: Development Bank of Southern Africa.

MAXWELL, D, AHIADKEKE, C, LEVIN, C, ARMAR-KLEMESU, M, ZAKARIA, S & LAMPTEY, G M, 1999. Alternative Food Security Indicators: revisiting the frequency and severity of coping strategies. *Food Policy*, 24 (4): 411-429.

MAXWELL, D G, 1995. *Measuring food insecurity: the frequency and severity of coping strategies*. Food Consumption and Nutrition Division Paper No. 8. Washington, DC: International Food Policy and Research Institute.

MAXWELL, S, 1996. Food security: a post-modern perspective. *Food Policy*, 21 (2): 155-170.

MAXWELL, S, 1991. National food security planning: first thoughts from Sudan. In Maxwell, S, (Ed.), *To Cure All Hunger: food policy and food security in Sudan*. London: Intermediate Technology Publications, pp.15-48.

MAY, J, 2000. *Poverty and Inequality in South Africa: meeting the challenge*. Cape Town: David Philip Publishers.

MAY, J, CARTER, M R, HADDAD, L & MALUCCIO, J, 2000. KwaZulu-Natal Income Dynamics Study (KIDS) 1993-1998: A longitudinal household data set for South African policy analysis. *Development Southern Africa*, 17 (4): 567-81.

MAY, J, 1998. *Poverty and inequality in South Africa*. Unpublished report prepared for the office of the Executive Deputy President and the Inter-Ministerial Committee for Poverty and

Inequality. Summary Report. [WWW document]. URL:
<http://www.gov.za/reports/1998/pirsum.htm> (Accessed 14 April 2004).

MAY, J, 1995. *The Composition and Persistence of Poverty in Rural South Africa*. Johannesburg: Land and Agricultural Policy Centre.

MCINTOSH, A & VAUGHAN, A, 1996. *Enhancing rural livelihoods in South Africa: myths and realities*. In Lipton, M, Ellis, F (eds.). *Land, Labour and Livelihoods in Rural South Africa: KwaZulu-Natal and Northern Province*. Durban: Indicator Press, pp.91-118.

MEDICAL RESEARCH COUNCIL (MRC), 2001. *Statistics for HIV/AIDS in South Africa*. [WWW document] URL: <http://www.mrc.ac.za> (Accessed on 5 June 2003).

MEKURIA, M & MOLETSANE, N P, 1996. Initial findings of rural household food security in selected districts of Northern Province. *Agrekon*, 35 (4): 309-313.

MGIJIMA, C, 1999. *Situational analysis of food security and nutrition in South Africa*. A speech at the 3rd Session of the International Consultative Conference on Food Security and Nutrition as Human Rights, Randburg, South Africa, 25-27th March.

MINISTRY FOR CONSTITUTIONAL AFFAIRS AND CONSTITUTIONAL DEVELOPMENT, 1998. *The White Paper on Local Government*. Pretoria: Ministry for Constitutional Affairs and Constitutional Development.

MOMSEN, J H, 1991. *Women and Development in the Third World*. London: Routledge.

MOORE, D, 1999. The AIDS threat and the private sector. *AIDS Analysis Africa*, 19 (6): 1.

MOSER, C, 1993. *Gender Planning and Development: theory, practice and training*. London: Routledge.

MUCHOPA, C & MUTANGADURA, G, 1999. Women, agriculture and HIV/AIDS: implications for agricultural policy and mitigation strategies. In Mutangadura, Mukurazita, D and Jackson, H, (eds). *AIDS and African Smallholder Agriculture*. Harare: Southern Africa AIDS Information Dissemination Service.

MUTANGADURA, G, 2001. Women and AIDS in southern Africa: the case of Zimbabwe and its policy implications. *Journal of Culture and African Women Studies*, 1 (2): 34-47.

MUTANGADURA, G, 2000. *Household welfare impacts of mortality of adult females in Zimbabwe: implications for policy and programme development*. Unpublished Paper presented at the AIDS and Economics Symposium, Durban, 7-8 July.

MUTANGADURA, G, MUKURAZITA, D & JACKSON, H, 1999. *A review of household and community responses to the HIV/AIDS epidemic in the rural areas of the sub-Saharan Africa*. Unpublished Report. Geneva: Southern Africa AIDS Information Dissemination Service.

MUTANGADURA, G & WEBB, D, 1999. The socio-economic impact of adult morbidity and mortality on households in Kafe District, Zambia. In Mutangadura, G, Mukurazita, D and Jackson, H, (eds). *AIDS and African Smallholder Agriculture*. Harare: Southern Africa AIDS Information Dissemination Service.

MWALE, E D, 2000. Institutional support for sustainable rural livelihoods in Southern Africa: results from Zimbabwe, Zambia and South Africa. *Natural Resource Perspectives*, No. 50. London: The Overseas Development Institute.

NAMPANYA-SERPELL, N, 2000. *Social and economic risk factors for HIV/AIDS-affected families in Zambia*. Unpublished Paper presented at the AIDS and Economics Symposium, Durban, 7-8 July.

NARAYAN, D, PATEL, J, SCHAFFT, J, RADEMACHER, A & KOCH-SCHULTE, S, 1999. *Can Anyone Hear Us?Voices from 47 Countries: voices of the poor*. Washington, DC: World Bank.

NARAYAN, D, 1996. *Toward participatory research*. World Bank Technical Paper Number 307. The International Bank for Reconstruction and Development. Washington, DC: World Bank.

NATIONAL DEPARTMENT OF AGRICULTURE, 2002. *The Integrated Food Security Strategy for South Africa*. Pretoria: National Department of Agriculture.

NATIONAL DEPARTMENT OF AGRICULTURE, 2001. *The Strategic Plan for South African Agriculture*. Pretoria: Department of Agriculture Directorate Information Services.

NATIONAL DEPARTMENT OF AGRICULTURE, 1999. *Agricultural policy in South Africa: a discussion document*. [WWW document]. URL: <http://www.nda.agri.za/publications.asp?category=Info+pak> (Accessed 7 October 2003).

NATIONAL DEPARTMENT OF AGRICULTURE, 1995. *White Paper on Agriculture*. Pretoria: Department of Agriculture Directorate Information Services.

NATIONAL MINISTRY OF PROVINCIAL AND LOCAL GOVERNMENT, 2000. *The Integrated Sustainable Rural Development Strategy*. Ministry of Provincial and Local Government: Pretoria.

NATIONAL TREASURY, 2003. *Intergovernmental fiscal review*. Pretoria: National Treasury.

NEEFJES, K, 2000. *Environments and Livelihoods: strategies for sustainability*. Oxford: Oxfam.

NEW ECONOMIC PARTNERSHIP FOR AFRICA'S DEVELOPMENT, 2004. *Comprehensive Africa Agriculture Development Programme*. [WWW document] URL: <http://www.sarpn.org/documents/d0001039/index.php> (Accessed 8 November, 2005).

NEUMAN, W, 1994. *Social Research Methods: qualitative and quantitative approaches*. (Second edition). Boston: Allyn and Bacon.

NGWIRA, N, BOTA, S & LOEVINSOHN, M, 2001. *HIV/AIDS, agriculture and food security in Malawi*. RENEWAL Working Paper 1. Lilongwe: Hague.

NYAMATHI, R N, FLASKERUD, J, LEAKE, B & CHEN, S, 1996. Impoverished women at risk for AIDS: social support variables. *Journal of Psychosocial Nursing*, 34 (11): 31-39.

PARKER, J, SINGH, I & HATTEL, K, 2000. *The role of microfinance in the fight against HIV/AIDS*. UNAIDS Background Paper. Johannesburg: CADRE & USAID.

PARKER, W, KISTNER, U, GELB, S, KELLY, K & O'DONOVAN, M, 2000. *Economic impact of HIV/AIDS in South Africa and its implications for governance: a bibliographic review*. Johannesburg: Centre for AIDS Development Research and Evaluation & United States Agency for International Development (CADRE/USAID).

PATEL, I C, 1991. Gardenings Socio-economic Impacts: community gardening in an urban setting. *Journal of Extension*, 29: 78.

PITTS, D, 2001. *The challenge of HIV/AIDS in South Africa: research and prevention in KwaZulu-Natal*. [WWW document] URL: <http://usinifo.state.gov/topical/global/hiv/01101901.htm> (Accessed on 13 February 2003).

POKU, N K, 2001. Africa's AIDS crisis in context: how the poor are dying. *Third World Quarterly*, 22(2): 191-204.

POSWELL, L, 2002. *The Post Apartheid South African Labour Market: a status report*. Cape Town: Development Policy Research Unit.

PRETTY, J N, 1996. *Sustainable Agriculture: impacts on food production and challenges for food security*. London: International Institute for Environmental Development.

RAHMATO, D, 1991. *Famine and survival strategies*. Uppsala: Scandinavian Institute of African Studies.

REUTLINGER, S, 1985. Food security and poverty in low income developing countries. *Finance and Development*, 22 (4): 7-11.

RICHARDSON, D, 1989. *Women and AIDS Crisis*. London: Unwin Hyman.

RIPHALN, R T, 2001. Rational poverty or poor rationality? The take-up of social assistance benefits. *Review of Income and Wealth*, 47 (3): 379-397.

ROBB, C, 1998. *Social aspects of the East Asian financial crisis: perspectives of poor communities*. A Paper prepared for Department for International Development's seminar on the implications of the East Asia crisis for poverty elimination, 15 July. [WWW document] URL: <http://www.worldbank.org/htm> (Accessed 3 September 2005).

RODDA, A, 1993. *Women and the Environment*. London & New Jersey: Zed Books Ltd.

ROTH, J, 2001. Informal micro insurance schemes: a case of funeral insurance in South Africa. *Small Enterprise Development*, 12 (1): 39-50.

RUGALEMA, G, 2000. Coping or struggling? A journey into the impact of HIV/AIDS in southern Africa. *Review of African Political Economy*, 28 (86): 535-545.

RUGALEMA, G, 1999. *Adult mortality as entitlement failure: AIDS and the crisis of rural livelihoods in a Tanzanian village*. Unpublished PhD Thesis. Institute of Social Studies: The Haag.

SAMSON, M J, 2002. The social, economic and fiscal impact of comprehensive social security reform for South Africa. *Social Dynamics*, 28 (2): 69-97.

SAMSON, M J, BABSON, O, HAARMANN, D, KHATI, G, MACQUENE, K & VAN NIEKERK, I, 2002. *Research review of social security reform and basic income grant for South Africa*. Economic Policy Research Institute Policy Report No.31. Pretoria: Economic Policy Research Institute.

SCHWABE, C A, ILLING, B & WILSON, D C, 1996. *Service Need and Provision within KwaZulu-Natal*. Pretoria: Human Sciences Research Council Publishers.

SCOONES, I, 1998. *Sustainable rural livelihoods: a framework for analysis*. Institute of Development Studies. Working Paper 72. Brighton: Institute of Development Studies.

SEEKINGS, J, 2002. The broader importance of welfare reform in South Africa. *Social Dynamics*, 28 (2): 1-38.

SEELEY, J & PRINGLE, C, 2001. *Sustainable livelihoods approaches and HIV/AIDS epidemic*. [WWW document] URL: <http://www.eldis.org/static/DOC12437.htm> (Accessed 25 April 2003).

SEN, A, 1981. *Poverty and Famines: an essay on entitlement and deprivation*. Oxford: Clarendon Press.

SENDER, J & JOHNSTON, D, 1996. Some poor and invisible women: farm labourers in South Africa. *Development Southern Africa*, 13 (1): 3-16.

SHAH, D R, 1990. *Alternatives in rural development*. New Delhi: Sterling Publishers.

SINGH, N & TITI, V, 1994. *Adaptive strategies of the poor in arid and semi-arid lands: in search of sustainable livelihoods*. Winnipeg: International Institute for Sustainable Development.

SMITH, A, 2000. HIV/AIDS in KwaZulu-Natal and South Africa. *AIDS Analysis Africa*, 11 (1): 6-7.

SOMMERS, P, 1984. *Low Cost Farming in Humid Tropics: an illustrated handbook*. Manila: Island Publishing House.

SOSKOLNE, V & SHTARKSHALL, R A, 2002. Migration and HIV/AIDS prevention programmes: linking structural factors, culture, and individual behaviour: an Israel experience. *Social Science and Medicine*, 55: 1297-1307.

SOUTHERN AFRICA DEVELOPMENT COMMUNITY FOOD, AGRICULTURE AND NATURAL RESOURCES VULNERABILITY ASSESSMENT COMMITTEE (SADC FANR VAC), 2003. *Towards identifying impacts of HIV/AIDS on food insecurity in southern Africa and implications for response: findings from Malawi, Zambia and Zimbabwe*. Harare: Mimeo.

SOUTHERN AFRICA AIDS INFORMATION DISSEMINATION SERVICE (SAfAIDS), 1999. The impact of HIV/AIDS: a case study of SAfAIDS. *SAfAIDS News*, 7 (4): 3-5.

SPROULL, N, 1995. *Handbook of Research Methods: a guide for practitioners and students in Social Sciences*, 2nd edition. Metecher: Scarecrow.

STAARTZ, J M, D' AGOSTINO, V C & SUNDBERG, S, 1990. Measuring food security in Africa: conceptual, empirical and policy issues. *American Journal of Agricultural Economics*, 72 (5): 1311-1317.

STATISTICS SOUTH AFRICA, 2005. *Mortality and causes of death in South Africa, 1997-2003*. Pretoria: Statistics South Africa.

STATISTICS SOUTH AFRICA, 2000. *Employment trends in agriculture in South Africa*. Pretoria: Statistics South Africa.

STEINBERG, M, JOHNSON, S, SCHIERHOUT, G & NDEGWA, D, 2002. *Hitting home: how households cope with the impact of HIV/AIDS epidemic*. Cape Town: Health Systems Trust and Henry J. Kaizer Family Foundation.

TANGO INTERNATIONAL, I, 2003. HIV/AIDS Prevention and Protection Initiative: A Methodology for Targeting Assistance to HIV/AIDS Affected Households in Zimbabwe. Harare: CARE-Zimbabwe.

TERREBLANCHE, S, 2002. *A History of Inequality in South Africa*. Pietermaritzburg: University of Natal Press.

THOMPSON, A & METZ, M, 1997. *Implications of Economic Policy for Food Security*. Rome: Food and Agriculture Organisation.

TOPOUZIS, D, 2002. *The socio-economic impact of HIV/AIDS on rural families with an emphasis on youth*. Geneva: Joint United Nations Programme on HIV/AIDS (UNAIDS).

TOPOUZIS, D, 2000. *Measuring the impact of HIV/AIDS on the agricultural sector in Africa*. Geneva: Joint United Nations Programme on HIV/AIDS (UNAIDS).

TOPOUZIS, D, 1998. *HIV/AIDS and agriculture: a Food and Agriculture Organisation perspective*. Geneva: Joint United Nations Programme on HIV/AIDS (UNAIDS).

UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP), 2001. *Human Development Report 2000*. New York: Oxford University Press.

UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP), 1998. *Human Development Report*. New York: Oxford University Press.

UNAIDS & WHO, 2006. Report on the Global AIDS epidemic. [WWW document] URL: http://www.unaids.org/en/HIV_data/2006/GlobalReport/default.asp (Accessed on 4 September 2006).

UNAIDS & WHO, 2005. *AIDS epidemic update*. Geneva: Joint United Nations Programme on HIV/AIDS (UNAIDS).

UNAIDS, 2004. *Report on the global AIDS epidemic*. Geneva: Joint United Nations Programme on HIV/AIDS (UNAIDS).

UNAIDS, 2002. *Impact of HIV/AIDS on agriculture and private sector in Swaziland: the demographic, social and economic impact on subsistence agriculture, commercial agriculture, Ministry of Agriculture and Cooperatives and Business*. Mbabane: Joint United Nations Programme on HIV/AIDS (UNAIDS).

UNAIDS, 2001. *Report on the global HIV/AIDS epidemic*. Geneva: Joint United Nations Programme on HIV/AIDS (UNAIDS).

UNAIDS, 2000. *Report on the global HIV/AIDS epidemic*. Geneva: Joint United Nations Programme on HIV/AIDS (UNAIDS). [WWW document] URL: <http://www.unaids.org> (Accessed on 1 July 2003).

UNAIDS & INTERNATIONAL ORGANISATION ON MIGRATION (IOM), 1998. Migration and AIDS. *International Migration*, 36 (4): 445-468.

UNAIDS, 1998. *Report on the global HIV/AIDS epidemic*. Geneva: Joint United Nations Programme on HIV/AIDS (UNAIDS).

VALDES, A, 1981. *Food security for developing countries*. Boulder, Colorado: Westview.

VAN AARDT, C J, 2002. *The demographic impact of HIV/AIDS on provinces and living standards measure (LSM) groups in South Africa, 1996 to 2011*. Pretoria: University of South Africa, Bureau of Market Research.

VAN DER BERG, S & VAN DER BREDENKAMP, C, 2002. Devising social security interventions for maximum poverty impact. *Social Dynamics*, 28 (2): 39-68.

VAN DYK, A, 2001. *HIV/AIDS Care and Counselling: a multi-disciplinary approach*. Second edition. Cape Town: Hanli Venter.

VAN KOPPEN, C S A, 2000. Resource, arcadia, lifeworld, nature concepts in Environmental Sociology. *Sociologia Ruralis*, 40 (3): 300-318.

VAN ROOYEN, J, 2000. Regional food security and agricultural policy in southern Africa: a challenge of policy conversion in diverse settings. *Development Southern Africa*, 17 (1): 7-21.

VAN ROOYEN, J, NGQANGWENI, S & FROST, D, 1996. Some considerations for South African food policy. *Agrekon*, 35 (4): 301-308.

VAN ZYL, J & KIRSTEN, J, 1997. Economic empowerment in South African agriculture. In Haddad, L, (ed). *Achieving Food Security in southern Africa: new challenges, new opportunities*. Washington, DC: International Food and Policy Research Institute, pp174-194.

VAN ZYL, J, 1994. Farm size efficiency, food security and market assisted rural land reform in South Africa. *Agrekon*, 33 (4):156-163.

VAN ZYL, J & KIRSTEN, J, 1992. Food Security in South Africa. *Agrekon*, 31 (4): 170-183.

WATTS, M, 1983. *Silent Violence: food, famine and peasantry in northern Nigeria*. Berkley: University of California Press.

WEBB, P & HARINARAYAN, A, 1999. A Measure of uncertainty: the nature of vulnerability and its relationship to malnutrition. *Disasters*, (23): 292-305.

WHITE, J & ROBINSON, E, 2000. HIV/AIDS and rural livelihoods in sub-Saharan Africa. *Policy Series* 6, Chatham: Natural Resources Institute.

WHITESIDE, A, 2002. Poverty and HIV/AIDS in Africa. *Third World Quarterly*, 23 (2): 313-332.

WHITESIDE, A, 2001. AIDS and poverty: the links. *AIDS Analysis Africa*, 12 (2): 1-5.

WHITESIDE, A, 2000. *AIDS: The challenge for South Africa*. Cape Town: Human and Rousenau Tafelberg.

WOLF, L E & LO, B, 2000. Ethical issues in clinical research: an issue for internists. *American Journal of Medicine*, 109 (1): 82-85.

WOLF, D L, 1991. Does the father know best? A feminist critique of household strategy research. In Clay, D C and Schwarzweller, H K (eds), *Research in Rural Sociology and Development: Research Annual*. London: JAI Press Inc.

WOOLARD, I & LIEBRANDT, M, 1999. *Measuring Poverty in South Africa*. DPRU Working Paper 99/33. Development Policy Research Unit, University of Cape Town.

WORLD BANK, 2003. *World Development Report 2002*. Oxford: Oxford University Press.

WORLD BANK, 2000. *World Development Report 1999*. Oxford: Oxford University Press.

WORLD BANK, 1997. *Confronting AIDS: public priorities in a global epidemic*. Oxford: Oxford University Press.

WORLD FOOD PROGRAMME (WFP), 2002. *Emergency Field Operations Pocketbook*. Rome: Food and Agriculture Organisation.

ZOOMERS, A, 1999. *Linking Livelihoods Strategies to Development: experiences from the Bolivian Andes*. Amsterdam: Royal Tropical Institute.

APPENDIX A: Sample of the Interview Schedule, round one of three, 2003



The impact of morbidity and mortality on women's coping strategies in Maphephetheni, KwaZulu-Natal

Group livelihood analysis and Household Survey: Round 1 of 3.

The aim of this group livelihood analysis and household survey is to identify linkages and impacts of morbidity and mortality on coping strategies among women engaged in community gardens in the Maphephetheni uplands, rural KwaZulu-Natal.

The information obtained from the participants is confidential. Each community garden group is assigned a number, which is the only identifier of the community garden group and household after the livelihoods analysis and household survey are complete.

This is the first of three group livelihood analysis discussions and household surveys. I will return two more times before the end of October 2004 and 2005 to update our information.

Thanks for your participation and cooperation in this study.

Date: _____ **Household respondent number:** _____ **Community garden group name:** _____

N.B.: CODES used for the categories of gender, marital status, educational status, etc., and are as follows:

- (a) **Gender:** 1= female, 0= male;
- (b) **Marital status:** 1 = single, 2= married, 3= divorced, 4= widowed, 5= cohabiting, 6= traditional union, 6= polygamous;
- (c) **Educational status:** number of years completed schooling or post school qualification/s.

(d) **Answer:** 1 = Yes, 0= No.

(e) **Grants:** 0=No grants, 1= Pension, 2= Child support, 3= Disability, 4= Remittances, 5= other (specify)

	Person (respondent) number									
<i>Please make sure that you write down the Head or the Acting head of the household in column 1. Write name of each person.</i>	1..... Garden Member	2.....	3.....	4.....	5.....	6.....	7.....	8.....	9.....	10.....
1. Age of each person										
2. Gender of each person										
3. Is ...a resident of the household?	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
4. Current health 1 = EXCELLENT 2 = VERY GOOD 3 = GOOD 4 = FAIR 5 = very poor/sick	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
5. Educational level (number of years in school)										
6. Cost of illness during this year?										

7. Marital status										
8. Monthly contribution to household										
9. Does this person get a grant? If so, what type of grant and record the amount per month.	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

	Person (respondent) number									
<i>Please make sure that you write down the Head or the Acting head of the household in column 1. Write name of each person.</i>	1..... HEAD	2.....	3.....	4.....	5.....	6.....	7.....	8.....	9.....	10.....
10. Occupation										
1 = WAGE EMPLOYED	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
2 = FARMER	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
3 = SELF-EMPLOYED (IE TAXIS OPPEATOR)	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
4 = HOUSEKEEPER	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4
5 = PENSIONER	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5
6 = DISABLED	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6
7 = UNEMPLOYED BUT SEEKING WORK	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7
8 = SCHOLAR	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8
9 = INFANT OR CHILD (0 – 6 YEARS)	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9

10 = VAGRANT	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10
11. Contribution to household chores										
1 = CARING FOR SICK HOUSEHOLD MEMBERS	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
2 = COLLECTING WATER	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
3 = COOKING	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
4 = COLLECTING FIREWOOD	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4
5 = WASHING	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5
6 = SWEEPING AND CLEANING THE HOUSE	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6

<i>Please make sure that you write down the Head or the Acting head of the household in column 1. Write name of each person.</i>	1..... Garden Member	2.....	3.....	4.....	5.....	6.....	7.....	8.....	9.....	10.....
12. Contribution to agriculture										
1 = LAND PREPARATION	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
2 = PLANTING	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
3 = WEEDING	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
4 = HARVESTING	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4
5 =APPLYING FERTILISER	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5
6 = APPLYING PESTICIDES	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6
7 = BUYING SEEDS	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7
8 = SELLING PRODUCE	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8
9 = OTHER (SPECIFY)	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9
10 = WATERING	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10

Morbidity and mortality profiles:

13. Any recent death(s) since January 2003? If yes,	
13.1 What was the age of the person(s) that died?	
13.2 What illness did the person(s) die of?	
13.3 What gender was the person(s) that died?	

13.4	Estimated funeral costs	
13.5	When death occurs, how long is the mourning period?	

13.6	How did the loss of these household members affect the household? That is, loss of income, care implications, orphans, occupation or livelihood implications.	
13.7	How do you cope with death when it has occurred in the family?	
14.	Do you have any orphans in your household/family? If yes, how many?	
15.	How does illness of household members affect the household?	
16.	Who cares for the sick (men or women)?	
17.	Does sickness of household member prevent farming activities?	
18.	Does sickness of household member prevent income generating or wage activities?	
19.	How do you cope with chronic illness of a family/household member?	

Community garden group crop production and type of fuel used

20.	Do you have a household garden for producing vegetables for home consumption?										
21.	Who does the ploughing of any field crops or community gardens?										
22.	Do you grow the following crops?	<u>Crop</u>					<u>Approximate production</u>				
		Maize									
		Beans									
		Madumbe									
		Sweet potato									
		Tomato									
		Pumpkin									
		Sorghum									
		Cabbage									
		Spinach/chard									
		Fruit									
		Peanuts									
		Carrots									
		Other									
		Other									
23.	Do you have major problems with your agricultural production with regard to lack of water, pests, soil infertility, and other?										
24.	How much do you spend on food per month?										
25.	What sources of energy do you use for:		Electricity	Gas	Solar	wood	diesel	Dung	Biogas		Other
	Cooking										
	Heating water										
	Heating rooms										
	Lights										

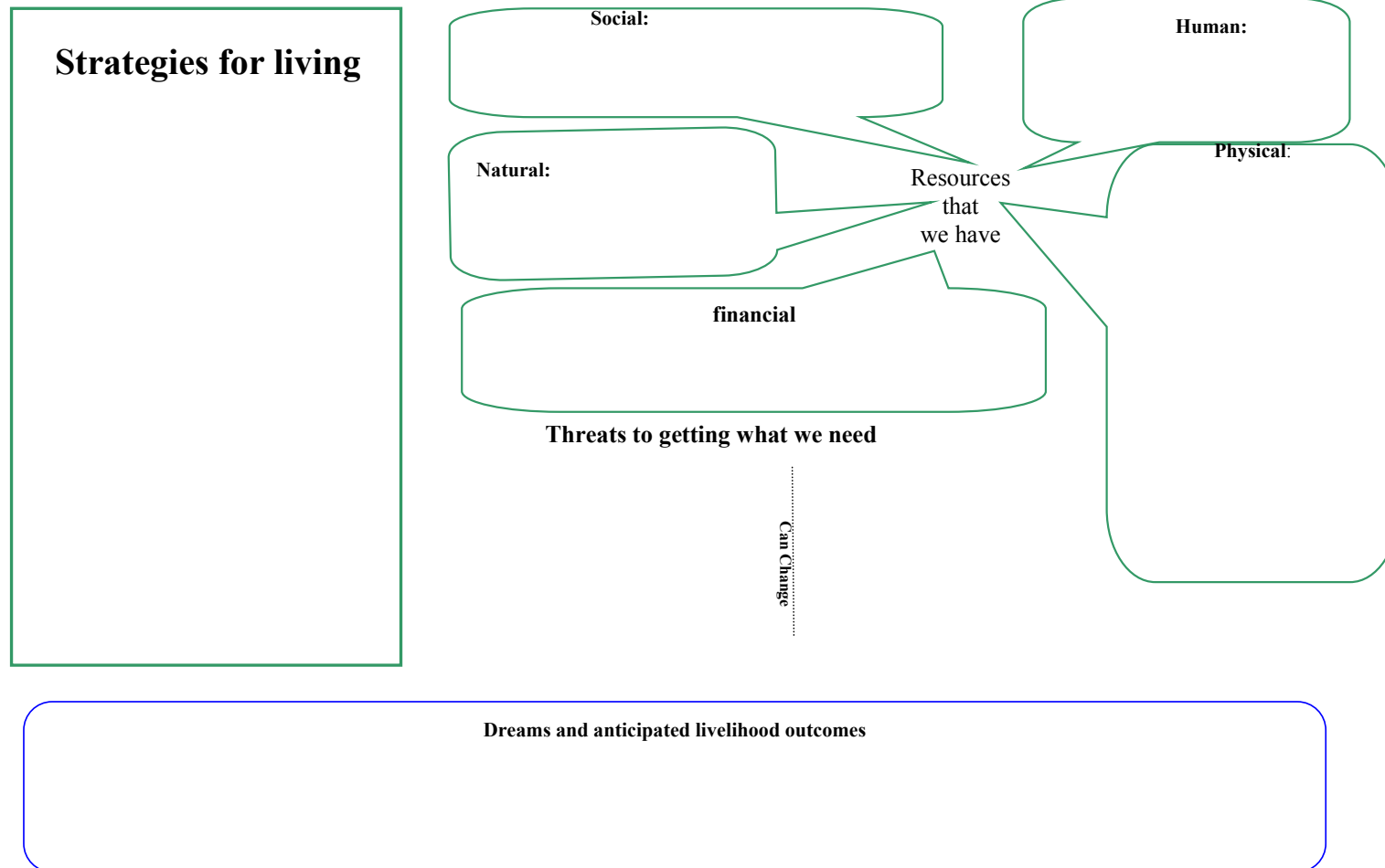
APPENDIX B: Sustainable Livelihoods Analysis Framework Posters (used in 2003 & 2004)

GROUP LIVELIHOOD ANALYSIS: THE TASKS BY THE COMMUNITY GARDEN GROUP.

DATE: _____

NAME OF THE COMMUNITY GARDEN GROUP: _____.

1. Draw your typical family on the flip chart indicating age, name, educational level, household size, resources and contribution to household and community chores.
2. Make a list of all livelihood strategies for your community garden group. (These are opportunities existing in the group).
3. What resources does your group have? (Here, take adequate consideration of natural, social, physical, human and financial capital).
4. What would your group like to change within the next five years? (What are your dreams?).
5. On pieces of card/paper, write all the factors that could threaten the sustainability or change your livelihood constructs.
6. What would happen if threats outlined above became real? What would you do to cope with the situation?
7. Rank the opportunities available in order of best sustainable option, to those with the greatest risk of failure. (Ranking of main livelihood strategies and threats).
8. What is in your group's power to change?
9. What is it that you would not be able to change?



APPENDIX C: Seasonality Chart, 2003.

3. SEASONALITY CHART: COMMUNITY GARDEN & FARM ACTIVITIES. (Refer to the poster).

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
Were there times since January 2003 that you did not have enough food to eat?												
Were there times since January 2003 that you worried there was not have enough food to eat?												
Were there times since January 2003 that you reduced the amount of food members of the family ate?												
When is land preparation done?												
When do you plant?												
When do you harvest?												
When are fruits available?												

APPENDIX D: Interview Schedule for Round two of three, 2004



UNIVERSITY OF KWAZULU-NATAL, PIETERMARITZBURG CAMPUS.

The impact of morbidity and mortality on women's coping strategies in Maphephetheni, KwaZulu-Natal

Survey questionnaire and group livelihood analysis, Round 2 of 3, September to October 2004.

This is a follow up (the second of three surveys and group livelihood analysis discussions) of the first survey conducted between September and October of 2003. The aim of this questionnaire and group livelihood analysis is to identify linkages and impacts of morbidity and mortality on coping strategies among women engaged in community gardening. The information obtained from the participants is confidential. Each household and community garden group is assigned a number, which is the only identifier of the household and community garden group after the questionnaire is complete. The findings/results of this research will be presented back to you, the participants and the chief in Maphephetheni.

Thanks for your participation and cooperation in this study.

Date: _____ Household member number: _____ Name of community garden _____

	Person (respondent) number									
	1..... Garden Member	2.....	3.....	4.....	5.....	6.....	7.....	8.....	9.....	10.....
<i>Please make sure that you write down the Head or the Acting head of the household in column 1. Write name of each person.</i>										
1. Age of each person										
2. Gender of each person										
3. Is still a resident of the household?	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
4. If no to Question 1, Reason?										
5. Has any other person joined the household since the last round of interviews (September 2003)? Add their name to the header row.										
6. Relationship of new member to garden member?										
7. Current health										
1 = EXCELLENT	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
2 = VERY GOOD	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
3 = GOOD	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
4 = FAIR	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4

5 = very poor/sick	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5
8. Cost of illness since January this year (2004)?										
9. Monthly contribution to household										
10. Does this person still get a grant? If so, record the amount per month.										

	Person (respondent) number									
<i>Please make sure that you write down the Head or the Acting head of the household in column 1. Write name of each person.</i>	1..... HEAD	2.....	3.....	4.....	5.....	6.....	7.....	8.....	9.....	10.....
11. Occupation										
1 = WAGE EMPLOYED	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
2 = FARMER	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
3 = SELF-EMPLOYED (IE TAXIS OPPerATOR, SHOP KEEPER)	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
4 = HOUSEKEEPER	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4
5 = PENSIONER	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5
6 = DISABLED	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6
7 = UNEMPLOYED BUT SEEKING WORK	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7
8 = SCHOLAR	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8
9 = INFANT OR CHILD (0 – 6 YEARS)	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9

10 = VAGRANT	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10
12. Contribution to household chores										
1 = CARING FOR SICK HOUSEHOLD MEMBERS	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
2 = COLLECTING WATER	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
3 = COOKING	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
4 = COLLECTING FIREWOOD	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4
5 = WASHING	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5
6 = SWEEPING AND CLEANING THE HOUSE	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6

<i>Please make sure that you write down the Head or the Acting head of the household in column 1. Write name of each person.</i>	1.....	2.....	3.....	4.....	5.....	6.....	7.....	8.....	9.....	10.....
	Garden Member									
13. Contribution to agriculture										
1 = LAND PREPARATION	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
2 = PLANTING	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
3 = WEEDING	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
4 = HARVESTING	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4
5 = APPLYING FERTILISER	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5
6 = APPLYING PESTICIDES	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6
7 = BUYING SEEDS	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7
8 = SELLING PRODUCE	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8
9 = OTHER (SPECIFY)	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9	<input type="checkbox"/> 9

10 = WATERING	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10
---------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Morbidity and mortality profiles:

14. Any recent death(s) since January 2004? If yes,		
14.1 What was the age of the person(s) that died?		
14.2 What illness did the person(s) die of?		
14.3 What gender was the person(s) that died?		
14.4 Estimated funeral costs		
14.5 When death occurs, how long is the mourning period?		

14.6	How did the loss of these household members affect the household? That is, loss of income, care implications, orphans, occupation or livelihood implications.
14.7	How do you cope with death when it has occurred in the family?
15.	Do you have any orphans in your household/family? If yes, how many?
16.	How does illness of household members affect the household?
17.	Who cares for the sick (men or women)?
18.	Does sickness of household member prevent farming activities?
19.	Does sickness of household member prevent income generating or wage activities?
20.	How do you cope with chronic illness of a family/household member?

APPENDIX E: Coping Strategies Index Methodology Form, 2004

Maphephetheni Community - **Date:** _____

Consumption Coping Strategies grouped and ranked by a group of informants (G1-G10): Grouping and ranking strategies of similar severity.

STRATEGY	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	AV.	Consensus Ranking	
1. Rely on less preferred and less expensive foods?													
2. Borrow food, or rely on help from a friend or relative?													
3. Buy food on credit?													
4. Gather wild food, hunt or harvest immature crops?													
5. Consume seed stock held for next season?													
6. Send household members to eat elsewhere?													
7. Limit portion size at meal times?													
8. Restrict consumption of adults in order for small children to eat?													
9. Feed working members of household at the expense of non-													

working members?													
10. Reduce number of meals eaten in a day?													
11. Skip entire days without eating?													
12. Beg food from neighbours or relatives													

NB: Categories: 4=very severe, 3=severe, 2=moderate and 1=least/not severe.

APPENDIX F: Interview Schedule for round three of three, 2005

MAPHEPHETHENI HOUSEHOLD AND CONSUMPTION QUESTIONNAIRE 2005

The information captured in this questionnaire is strictly confidential and will be used for research purposes by staff and students at the University of KwaZulu-Natal to inform community members and stakeholders how they might improve their food security situation. Respondents do not have to answer questions – answers are voluntary. The respondent should be the *de facto* (actual) household head.

Interviewer: _____

Date: _____



Respondent's name:		Household number:		GPS coordinate:	
--------------------	--	-------------------	--	-----------------	--

For information call: ~~Dr Sheryl Hendriks, Food Security Programme, University of KwaZulu Natal. Tel: 033 2605726~~

Please indicate deaths and people who are no longer household members. Add the names for births and additional household members.	Write the names of all household members									
	1..... HEAD	2.....	3.....	4.....	5.....	6.....	7.....	8.....	9.....	10.....
1. Is Male or female	<input type="checkbox"/> M <input type="checkbox"/> F	<input type="checkbox"/> M <input type="checkbox"/> F	<input type="checkbox"/> M <input type="checkbox"/> F	<input type="checkbox"/> M <input type="checkbox"/> F	<input type="checkbox"/> M <input type="checkbox"/> F	<input type="checkbox"/> M <input type="checkbox"/> F	<input type="checkbox"/> M <input type="checkbox"/> F	<input type="checkbox"/> M <input type="checkbox"/> F	<input type="checkbox"/> M <input type="checkbox"/> F	<input type="checkbox"/> M <input type="checkbox"/> F
2 (a). If the household head is a female is she widowed? 2 (b) Is household member Still a resident? If no, give reason:	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Y <input type="checkbox"/> N									
3. Age in years										
4. Highest level of completed schooling or educational training (years or grade) more than matric = 13 years										
5. Occupation 1 = WAGE EMPLOYED 2 = FARMER 3 = SELF-EMPLOYED (E.G. TAXI OPERATOR, SHOP KEEPER) 4 = HOUSEKEEPER 5 = PENSIONER 6 = DISABLED 7 = UNEMPLOYED BUT SEEKING WORK 8 = SCHOLAR 9 = INFANT OR CHILD (0 – 6 YEARS) 10 = VAGRANT	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10
3-6. Wage or salary income (Rands per month)										
7. Income from social grants ie pension, child grant, disability (Rands per month)										
8. Income remitted by migrants and commuters (Rands per										

Formatted: Bullets and Numbering

month)										
5.9. If the household head is a migrant or weekly commuter, who is the <i>de facto</i> household head?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Formatted: Bullets and Numbering

	Person (respondent) number									
	1..... HEAD	2.....	3.....	4.....	5.....	6.....	7.....	8.....	9.....	10.....
10. During the past year did any household member earn income through any of the non-farm enterprises listed below? If yes, report the income from each activity.	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
10.1 Hiring out accommodation										
10.2 Hiring out contractor services or equipment										
10.3 Milling grain										
10.4 Baking, brewing or selling meals										
10.5 Building or repairing houses										
10.6 Block making, stone- or metalwork										
10.7 Hawking										
10.8 Shop-keeping										
10.9 Selling of firewood										
10.10 Making furniture or handicrafts										
10.11 Agriculture:										

	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
10.12 Community garden										
10.13 Selling of traditional medicine										
10.14 Other, specify:										

<p>11. Write the names of all the members of the household.</p> <p>Write down the Head or the Acting head of the household in column 1.</p> <p><i>If there are more than 10 household members, please use a second form to record the additional household members. Please put the household number on the second form.</i></p>	Person (respondent) number									
	1..... HEAD	2.....	3.....	4.....	5.....	6.....	7.....	8.....	9.....	10.....
<p>11.1 Does Have a savings account (i.e. bank, post office, stockvel etc)? If yes, please provide the following information:</p>	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
11.2 Current level of savings (Rands)										

12 Income shocks:

How does the household cope with major income shocks (e.g. drought, death of a bread winner, job loss, etc.) (Please tick)

Sell livestock	<input type="checkbox"/> Y <input type="checkbox"/> N
Sell other assets	<input type="checkbox"/> Y <input type="checkbox"/> N
Use own cash savings	<input type="checkbox"/> Y <input type="checkbox"/> N
Borrow money from relatives	<input type="checkbox"/> Y <input type="checkbox"/> N
Borrow money from stokvel	<input type="checkbox"/> Y <input type="checkbox"/> N
Receive help from friends or relatives	<input type="checkbox"/> Y <input type="checkbox"/> N
Take on additional work	<input type="checkbox"/> Y <input type="checkbox"/> N
Reduce spending	<input type="checkbox"/> Y <input type="checkbox"/> N
Reduce food consumption	<input type="checkbox"/> Y <input type="checkbox"/> N
Reduce or stop debt repayments	<input type="checkbox"/> Y <input type="checkbox"/> N
Other: Please specify	<input type="checkbox"/> Y <input type="checkbox"/> N

13. Which months of the year did your household: (*Tick the appropriate boxes*)

	Oct 04	Nov 04	Dec 04	Jan 05	Feb 05	Mrch 05	April 05	May 05	June 05	July 05	Aug 05	Sept 05
Experience hunger?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. In this section, we look at the patterns of food consumption for all resident household members. This should include all the food they have eaten. It should not include food that has been bought for resale or exchanging for commercial purposes. Below is a list of different kinds of food that people may have eaten in the past MONTH.

Food Item	Was [..] eaten by this household in the past month?		If yes, what the value of [..] eaten from purchases in the past month? Rand	What was the value of [..] eaten received as gifts in the past month? Rand	What was the value of [..] eaten received as payment in the past month (including rations)? Rand	What was the value of [..] eaten from the community garden in the past month? Rand	What was the value of [..] eaten from the home garden in the past month? Rand	What was the value of [..] eaten from other own agricultural production in the past month? Rand
	Yes	No						
Maize grain	<input type="checkbox"/> Y <input type="checkbox"/> N							
Mealie Meal / Maize Flour	<input type="checkbox"/> Y <input type="checkbox"/> N							
Rice	<input type="checkbox"/> Y <input type="checkbox"/> N							
White / Brown Bread	<input type="checkbox"/> Y <input type="checkbox"/> N							
Wheat Flour	<input type="checkbox"/> Y <input type="checkbox"/> N							
Breakfast Cereal – cornflakes, oats	<input type="checkbox"/> Y <input type="checkbox"/> N							
Dried Peas / Lentils / Beans	<input type="checkbox"/> Y <input type="checkbox"/> N							
Potatoes	<input type="checkbox"/> Y <input type="checkbox"/> N							
Tomatoes	<input type="checkbox"/> Y <input type="checkbox"/> N							
Sweet Potatoes	<input type="checkbox"/> Y <input type="checkbox"/> N							
Madumbes	<input type="checkbox"/> Y <input type="checkbox"/> N							
Vegetable Oil	<input type="checkbox"/> Y <input type="checkbox"/> N							
Peanuts/ Other nuts	<input type="checkbox"/> Y <input type="checkbox"/> N							
Peanut butter	<input type="checkbox"/> Y <input type="checkbox"/> N							
Margarine/Butter / Other Fats eg holsom	<input type="checkbox"/> Y <input type="checkbox"/> N							
Cheese	<input type="checkbox"/> Y <input type="checkbox"/> N							
Jam	<input type="checkbox"/> Y <input type="checkbox"/> N							

Fresh Milk/ Steri Milk / UHT	<input type="checkbox"/> Y <input type="checkbox"/> N						
Sour Milk/ Maas/ Yoghurt	<input type="checkbox"/> Y <input type="checkbox"/> N						

Food Spending and Consumption (Continued)

Food Item	Was [..] eaten by this household in the past month? Yes No		If yes, what was the value of [..] eaten from purchases in the past month? Rand	What was the value of [..] eaten received as <i>gifts</i> in the past month? Rand	What was the value of [..] eaten received as <i>payment</i> in the past month (including rations)? Rand	What was the value of [..] eaten from <i>the community garden</i> in the past month? Rand	What was the value of [..] eaten from <i>the home garden</i> in the past month? Rand	What was the value of [..] eaten from other own agricultural production in the past month? Rand
Baby Formula	<input type="checkbox"/> Y	<input type="checkbox"/> N						
Milk Powder/coffee creamers	<input type="checkbox"/> Y	<input type="checkbox"/> N						
Sugar	<input type="checkbox"/> Y	<input type="checkbox"/> N						
Mutton / Beef / Pork / Goat meat	<input type="checkbox"/> Y	<input type="checkbox"/> N						
Tinned meat / Processed meat / Polony	<input type="checkbox"/> Y	<input type="checkbox"/> N						
Offal	<input type="checkbox"/> Y	<input type="checkbox"/> N						
Chicken	<input type="checkbox"/> Y	<input type="checkbox"/> N						
Eggs	<input type="checkbox"/> Y	<input type="checkbox"/> N						
Fresh Fish	<input type="checkbox"/> Y	<input type="checkbox"/> N						
Tinned Fish	<input type="checkbox"/> Y	<input type="checkbox"/> N						
Pumpkin / squash	<input type="checkbox"/> Y	<input type="checkbox"/> N						
Green mealies	<input type="checkbox"/> Y	<input type="checkbox"/> N						
Green vegetables / Tinned vegetables	<input type="checkbox"/> Y	<input type="checkbox"/> N						
Carrots and beetroot / Tinned vegetables	<input type="checkbox"/> Y	<input type="checkbox"/> N						
Other vegetables / Wild vegetables / Imifino	<input type="checkbox"/> Y	<input type="checkbox"/> N						
Bananas	<input type="checkbox"/> Y	<input type="checkbox"/> N						
Apples, peaches, guavas etc.	<input type="checkbox"/> Y	<input type="checkbox"/> N						
Citrus fruit (orange, lemon, nartjies)	<input type="checkbox"/> Y	<input type="checkbox"/> N						
Soft drinks (Coke etc)	<input type="checkbox"/> Y	<input type="checkbox"/> N						
Tinned fruit	<input type="checkbox"/> Y	<input type="checkbox"/> N						
Meals prepared outside home (take aways)	<input type="checkbox"/> Y	<input type="checkbox"/> N						

Other food expenditure / consumption	<input type="checkbox"/> Y <input type="checkbox"/> N					
--------------------------------------	---	--	--	--	--	--

	Were any [..] ? Yes No	If yes, what was the total value in the past month? (Rand)
Meals Given to Guests	<input type="checkbox"/> Y <input type="checkbox"/> N	
Meals Received as Guests	<input type="checkbox"/> Y <input type="checkbox"/> N	

15 Regular Non-Food Spending

FOR EACH ITEM, ASK: In the past **MONTH**, about how much did the residents of the household spend on [..] ?

PERSONAL ITEMS:		Rands per month
Cigarettes, tobacco	<input type="checkbox"/> Y <input type="checkbox"/> N	
Beer, wine, spirits	<input type="checkbox"/> Y <input type="checkbox"/> N	
Entertainment (cinema, sports, music, lottery, etc)	<input type="checkbox"/> Y <input type="checkbox"/> N	
Personalised care items: cosmetics, soap, shampoo, haircuts, and so on	<input type="checkbox"/> Y <input type="checkbox"/> N	
Newspapers/stationery, envelopes, stamps	<input type="checkbox"/> Y <input type="checkbox"/> N	
Telephone (rental + calls + prepaid) including cell phone	<input type="checkbox"/> Y <input type="checkbox"/> N	
REGULAR TRANSPORT COSTS:		
Petrol, oil and car/bakkie service	<input type="checkbox"/> Y <input type="checkbox"/> N	
Buses, taxis, and trains	<input type="checkbox"/> Y <input type="checkbox"/> N	
MISCELLANEOUS:		
Washing powder etc.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Crèche/Childcare	<input type="checkbox"/> Y <input type="checkbox"/> N	
Religious and membership dues of organizations	<input type="checkbox"/> Y <input type="checkbox"/> N	
Informal taxation and donations	<input type="checkbox"/> Y <input type="checkbox"/> N	
Domestics, gardeners and other household labour	<input type="checkbox"/> Y <input type="checkbox"/> N	
ENERGY, WATER AND MUNICIPAL RATES:		
Water	<input type="checkbox"/> Y <input type="checkbox"/> N	
Electricity	<input type="checkbox"/> Y <input type="checkbox"/> N	
Other energy sources (wood, paraffin, charcoal/coal, candles, gas, purchasing/charging batteries, diesel oil for generators, other)	<input type="checkbox"/> Y <input type="checkbox"/> N	

16 Occasional Non-Food Spending

FOR EACH ITEM, ASK: In the past YEAR, about how much did the household spend on [..] ?

HOUSEHOLD ITEMS:		Rands per year
Kitchen equipment, like pots and pans, lamps, torches etc.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Home maintenance and repairs to the dwelling	<input type="checkbox"/> Y <input type="checkbox"/> N	
Bedding, sheets, blankets and towels	<input type="checkbox"/> Y <input type="checkbox"/> N	
Furniture and other household appliances	<input type="checkbox"/> Y <input type="checkbox"/> N	
CLOTHING AND SHOES:		
Shoes and clothes for children (excluding school uniforms)	<input type="checkbox"/> Y <input type="checkbox"/> N	
Shoes and clothes for adults	<input type="checkbox"/> Y <input type="checkbox"/> N	
Material to make clothing, curtains, and other items	<input type="checkbox"/> Y <input type="checkbox"/> N	
HEALTH AND CARE:		
Medical Aid Scheme/Medical Insurance Fees	<input type="checkbox"/> Y <input type="checkbox"/> N	
Dentists, doctors or nurses (not covered by Medical Aid/Insurance)	<input type="checkbox"/> Y <input type="checkbox"/> N	
Hospital/Clinic fees (not covered by Medical Aid/Insurance)	<input type="checkbox"/> Y <input type="checkbox"/> N	
Medical supplies, for example, medicines, bandages and so on (not covered by Medical Aid/Insurance)	<input type="checkbox"/> Y <input type="checkbox"/> N	
Traditional healer's fees	<input type="checkbox"/> Y <input type="checkbox"/> N	
PERSONAL AND OTHER ITEMS:		
Jewellery, watches, other luxury goods	<input type="checkbox"/> Y <input type="checkbox"/> N	
Ceremonies (weddings, funerals, etc.)	<input type="checkbox"/> Y <input type="checkbox"/> N	
EDUCATION:		
School fees and tuition	<input type="checkbox"/> Y <input type="checkbox"/> N	
University/College fees	<input type="checkbox"/> Y <input type="checkbox"/> N	
Books and Uniforms (including stationery)	<input type="checkbox"/> Y <input type="checkbox"/> N	
Other School Expenses (transport, meals at school, boarding fees, contributions to school buildings, extra costs for teachers, extramural activities, other)	<input type="checkbox"/> Y <input type="checkbox"/> N	
LIFE AND PROPERTY INSURANCE and savings:		
Life insurance, funeral policies, burial societies	<input type="checkbox"/> Y <input type="checkbox"/> N	
Short-term insurance (e.g., car, property & fire, crop)	<input type="checkbox"/> Y <input type="checkbox"/> N	
Savings/stockvels/savings clubs	<input type="checkbox"/> Y <input type="checkbox"/> N	

THANK YOU for PARTICIPATING IN THIS SURVEY

APPENDIX G: A summary of study findings presented to the study sample, the chief and local counsellors

REPORT ON STUDY FINDINGS ON THE IMPACT OF MORBIDITY AND MORTALITY ON WOMEN'S COPING STRATEGIES IN MAPHEPHETHENI, RURAL KWAZULU-NATAL

BY: SAMUEL CHINGONDOLE, FOOD SECURITY PROGRAMME, UNIVERSITY OF KWAZULU-NATAL, PMB CAMPUS

RESEARCH SUPERVISOR: PROF. S.L. HENDRIKS

VENUE: THE MAPHEPHETHENI UPLANDS






DATE: 14TH JUNE 2006 and **21/06/2006**

PARTICIPANTS: 10 COMMUNITY GARDEN CLUBS

FACILITATORS/ORGANISERS: MR. B.E. GWALA AND MRS. MNGOMEZULU

TRANSLATOR/ASSISTANT: MJABU & STEVE CHISANYA

CONTENT OF REPORT:

-  ROLE OF SUBSISTENCE AGRICULTURE (COMMUNITY GARDENS)
-  ROLE OF WOMEN IN COMMUNITY GARDENS/SUBSISTENCE AGRICULTURE
-  TRENDS IN MORBIDITY AND MORTALITY
-  INCREASE IN MORBIDITY AND MORTALITY
-  WOMEN'S (HOUSEHOLD) COPING STRATEGIES IN THE FACE OF MORBIDITY & MORTALITY AND FOOD INSECURITY. IS THIS TRUE?

INTRODUCTION

The aim of this meeting is to present the study findings of the research conducted between September and October of 2003, 2004 and 2005. The study investigated the impact of morbidity and mortality on coping strategies among women (community garden club members and their households) in the Maphephetheni uplands. The study investigated five important issues, namely:

- (1) The role of subsistence agriculture (community gardens) in food and livelihood security; (2) The role of women in rural households and subsistence food production;
- (3) Socio-economic impacts of morbidity and mortality on individual, household and community resources;
- (4) The labour constraints created by deaths and sickness and;
- (5) Women's coping strategies with respect to illness, death and food insecurity.

A SUMMARY OF STUDY FINDINGS:

1. THE ROLE OF COMMUNITY GARDENS OR SUBSISTENCE AGRICULTURE IN SUSTAINABLE RURAL LIVELIHOODS

Constraints of subsistence agriculture

- ✚ lack of a training skills centre (infrastructural), that is under-development of non-farm or off-farm economy;
- ✚ lack of adequate labour due to morbidity and mortality;
- ✚ lack of adequate agricultural knowledge, skills and experience;
- ✚ soil infertility;
- ✚ bio-climactic factors such as lack of adequate rainfall (dry rivers/streams);
- ✚ lack of agricultural input such as seeds, farm implements due to reported low incomes;
- ✚ lack of proper fencing, hence problems with animals such as cattle and goats, and;
- ✚ weeds, pests and diseases.

These were confirmed to be continual/ongoing constraints.

The main crops grown in the Maphephetheni uplands by community vegetable gardens included: *amadumbe* (taro), beans, beetroot, cabbage, carrots, green pepper, onion, spinach, sweet potatoes and tomato. *Added maize to this list.*

What is the extent of the contribution of subsistence agriculture to sustainable rural livelihoods in the Maphephetheni uplands?

One way to assess the role of agriculture in improving sustainable livelihoods is to look at its contribution to household income in rural KwaZulu-Natal. In this study, household income sources were divided into two primary categories of farm and non-farm sources. Farm income included income derived from the sale of produce while non-farm sources included government social security grants, remittances, household commercial enterprises and other sources. Table 5.1 shows the various household income sources and the average monthly contribution of each to total household income.

Table 5.1: Sources of income and their contribution to total household income among the Maphephetheni uplands community garden households (n=68), 2005.

Income source	Average monthly household income (Rands)	Contribution of income sources to total household income expressed as %
1. Farming (community gardening & agriculture)	192.99	7.6
2. Social grants	714.56	
3. Wages	716.09	28.08
4. Small scale household commercial enterprises	767.24	28.15
5. Remittances	50.00	30.16
6. Other non-farm income	102.80	1.97
		4.04
Total	2543.48	100

Access to government grants takes too long and members end up giving up.

Table 5.2: Sources of income from small scale commercial enterprises and contribution to total household income in rural KwaZulu-Natal (n=68), 2005.

Income source (small scale commercial enterprise)	Average monthly income (Rands)	Contribution of small scale commercial enterprises as per cent of total household income
Catering	2.94	0.34
Building & repairing houses	54.41	6.25
Hawking	11.32	1.3
Shop-keeping*	326.56	37.51
Selling firewood	60.93	7.00
Making furniture and handcrafts	248.53	28.55
Selling of <i>muti</i> (traditional medicine)	116.96	13.43
Sewing	13.24	1.52
Domestic working	31.34	3.60
Other/not specified	4.41	0.50
Total	870.64	100

These results suggest that households in the Maphephetheni uplands diversified their sources of income and/or livelihood activities to supplement agriculture-based livelihoods. The non-farm sector also plays a key role in contributing to rural livelihoods. Furthermore, a growing non-farm sector is important for promoting growth in the subsistence agricultural sector.

✚ **Source** of subsistence food and income

✚ **Social capital:** Community garden club members reported that community gardens provided them not just with food and subsistence income, but also with a sense of belonging together, connectedness, networking, sharing and social support, particularly in times of shocks and stresses such as illness, death and food insecurity.

Do community gardens provide social support to you as members? HOW?

2. THE ROLE OF WOMEN IN RURAL HOUSEHOLDS AND SUBSISTENCE FOOD PRODUCTION

- ❖ Women provided most of the household labour agricultural production for households. This suggests that community gardens are seen as the domain of women.
How would you feel if men joined community gardening and worked together with you? Members would feel very happy because men would help with ploughing and fencing and other hard tasks of community gardening. Men are viewed to be lazy and see community gardens as women's work. Men's joining would strengthen and enhance the social support dimension of community gardens.
- ❖ All community garden club members reported undertaking one or most or all of the following community garden tasks: ploughing, planting, watering the garden, weeding, harvesting, processing of basic food stuff, tending animals and selling some of the community garden produce.
- ❖ Women (community garden club respondents) undertook most of household chores, namely caring for the sick, fuel collection, water collection, cooking, cleaning and washing.
- ❖ In addition to subsistence agricultural activities and household chores, community vegetable garden club members were also engaged in other income generating enterprises such as block making and water and sanitation projects. These commercial enterprises provided cash/income to the members, and ultimately, to the households.
- ❖ The members were also engaged in bead making, mat weaving, selling traditional medicine and fuel, membership of stockvels and burial clubs (*the fees begin from R50 onwards dependent upon the ability of members. Those that can afford to contribute more they do so*), receipt of pension grants, sewing, crotchet,

broom making and house building. All these informal economic activities were sources of income and contributed to their rural livelihoods. Hence, women were seen to play an important role in these livelihood activities. “Yes, this is not surprising! When a child cries, he/she calls he name ‘mama’ and not ‘baba’. Therefore, we are indeed the backbone and mainstay of food and livelihood security”.

- ❖ The above analysis suggests that the key role of women in contributing to subsistence agriculture extends to the off-farm livelihood activities. The contribution of agriculture to sustainable livelihoods and the role of women to rural households and subsistence food production are compromised by sickness and death.

3. CHANGES AND TRENDS IN MORBIDITY AND MORTALITY

- + The number of sick people significantly increased between the first two rounds of interviews. There were more sick people in 2004 than they were in 2003.
- + The number of deaths increased in 2004. Thirty three (33) per cent of deaths in the Maphephetheni uplands in 2003 were caused by Tuberculosis while another 33 per cent of deaths were due to multiple illnesses such as TB, pneumonia, diarrhoea, skin rushes, diabetes and arthritis. Sixteen per cent of deaths were due to pneumonia and diarrhoea.
- + There were clear trends in terms of increase in illness, deaths, care giving, cost of illness and funerals over the (first two) years of research.
- + Household members (women mostly cared for the sick) spent time looking after the sick instead of doing agricultural tasks. Hence, both off-farm and farm activities were disrupted
- + Age (17-55), gender (more female members than male household members) and condition of health correlated.

4. COPING STRATEGIES IN THE FACE OF MORBIDITY & MORTALITY AND FOOD INSECURITY. IS THIS TRUE?

Before presenting you with the findings on the coping strategies of garden club members and their households, it should be noted that:

Government grants were a source of income for many households in the Maphephetheni uplands and represented an important safety net (a mitigating factor) in the face of stresses such as illness, death and food insecurity. *Confirmed as true.*

4.1 Table 8.2: Use of financial strategies by households to help cope with income shocks in the Maphephetheni uplands in 2004.

Financial coping Strategy/response	Sell livestock (per cent)	Sell assets (per cent)	Use own cash savings(per cent)	Borrow money from friends or relatives (per cent)
Yes	23.0 (3)	4.9 (4)	26.2 (2)	83.6 (1)
No	77.0	95.1	73.8	16.4

- ❖ The most frequent financial coping strategy was borrowing, followed by use of savings, and the sale of livestock and other assets. There was a relatively low asset ownership and this explains why only very few households were able or willing to exercise asset sale as a financial coping strategy. This in turn suggests that proceeds from asset sales, although relatively uncommon, represented a substantial source of resources in times of financial crises.
- ❖ Migration was one of the coping strategies in the Maphephetheni uplands. *Some household members migrated to city places such as Durban to seek salaried employment.*

Table 8.5: Household Consumption Coping Strategies in the Maphephetheni uplands in 2004

Strategy	Never (per cent)	Hardly at all (per cent)	Once in a while (per cent)	Pretty often (per cent)	All the time/everyday (per cent)
1. Rely on less preferred and less expensive foods	8.2	8.2	32.8	42.6	8.2
2. Borrow food, or rely on help from a friend or relative	16.4	8.2	36.1	34.4	4.9
3. Buy food on credit	65.6	1.6	6.6	16.4	9.8
4. Gather wild food, hunt or harvest immature crops	26.2	9.8	23.0	32.8	8.2
5. Consume seed stock held for the next season	24.6	4.9	9.8	50.8	9.8
6. Send household members to eat elsewhere	65.6	9.8	13.1	11.5	0
7. Limit portion size at meal times	24.6	9.8	27.9	34.4	3.3
8. Restrict consumption of adults for small children to eat	50.8	8.2	13.1	24.6	3.3
9. Feed working members of household at the expense of non-working members	86.9	6.6	6.6	0	0
10. Reduce number of meals in a day	37.7	18.0	19.7	23.0	1.6
11. Skip entire days without eating	83.6	6.6	6.6	3.3	0
12. Beg from neighbours or friends	32.8	32.8	27.9	6.6	0

Table 8.5 shows that:

- ❖ The most frequent strategy was consuming seed stock held for the next planting season which 50.8 per cent of households exercised.
- ❖ The second most frequently applied strategy was reliance on less preferred and less expensive foods (42.6 per cent) and this was followed by
- ❖ Limiting portion size at meal times and borrowing food from a friend or relative (34.4 per cent each).
- ❖ The forth most frequently applied coping strategy was gathering wild food for consumption by household members.
 - These strategies suggest that they are erosive in nature since they seemingly compromise dietary needs for household members, more particularly for sick members, further pushes households deeper into poverty through debt repayments, and consumption of seed stock could result in low agricultural productivity.
- ❖ However, the study also shows that more than 80 per cent of the sample households did not employ more severe consumption coping strategies such as skipping entire days without eating (83.6 per cent) and feeding working members of the household at the expense of non-working members (86.9 per cent).

ALL THESE WERE CONFIRMED AS TRUE!

5. CONCLUSIONS

- ✚ **First**, this study concluded that livelihood strategies in the Maphephetheni uplands comprised diverse income sources. This conclusion suggests that while agriculture plays a key role in sustainable rural livelihoods, livelihoods insecurity cannot be solved by promoting subsistence agricultural growth alone. More attention needs to be paid to the promotion of non-farm activities or small scale commercial enterprises, particularly those linked to the subsistence agricultural sector. Clearly, this conclusion suggests a strategy that enhances and promotes farm and off-farm linkages in order to yield better outputs in terms of income generation and sustainable rural livelihoods. Improvement in farm and off-farm livelihood sectors leads to households becoming more resilient to cope with the impact of morbidity and mortality.
- ✚ **Second**, this study concludes that rural women in the Maphephetheni uplands make a substantial contribution to subsistence agriculture, entrepreneurial activities and social services and are critical to household food security and rural sustainable livelihoods. However, women's contribution to subsistence agriculture is compromised by morbidity and mortality that are considerable social and economic stresses on households.
- ✚ **Third**, cumulative burdens of morbidity and mortality represent a considerable social and economic stress.
- ✚ **Fourth**, the study also concludes that, in most cases, morbidity and mortality experienced by households exhibited a classic/typical HIV/AIDS pattern. Long & chronic illnesses, opportunistic diseases such as TB, Pneumonia, Cancer/skin diseases, etc. *NB: BE SENSITIVE HERE!*
- ✚ **Fifth**, asset ownership helps households cope with stresses such as morbidity and mortality without necessarily having to affect the food security status.

✚ **Lastly**, the study concludes that households or communities with morbidity and mortality rates experience greater fluctuations in income levels than non-affected households or communities and government social grants are a useful safety net in assisting households to cope with the impacts of morbidity and mortality or other shocks or stresses such as food insecurity.

QUESTIONS TO THE GARDEN CLUB MEMBERS:

1. WHAT IS THE FUTURE OF COMMUNITY GARDENING IN MAPHEPHETHENI?

Community garden club members saw the future of community gardens as shaky and not very much promising for the following reasons: Lack of pest control knowledge; lack of water pipes/irrigation systems (water problem); lack of adequate fencing to protect their gardens/crops from animals such as cattle and goats; lack of market to sell their produce for income; an agricultural extension officer does not visit them (but are aware of the existence of the extension officer that is supposed to be visiting them). If these are not addressed, then the members do not see the future of community gardens as promising.

2. DO YOU FIND COMMUNITY GARDENING IMPORTANT? ARE COMMUNITY GARDENS A CORE SUBSISTENCE AGRICULTURAL ACTIVITY IN THE MAPHEPHETHENI UPLANDS? PLEASE, EXPLAIN.

When crops are available in the gardens, then the members find community gardening important. The members deemed community gardens as a core subsistence agricultural activity since they see them as a source of subsistence food and income/cash but also as a source of social support in times of illness and death.

3. DOES COMMUNITY GARDENING CONTRIBUTE TO FOOD SECURITY IN THE MAPHEPHETHENI UPLANDS? PLEASE, EXPLAIN.

In their view, community garden members see community gardens as contributing to food security as community gardens provide them with healthy foods to feed their children/household members in addition to being a source of social support and subsistence income.

4. DO COMMUNITY GARDENS PROVIDE SOCIAL SUPPORT IN MAPHEPHEHENI? PLEASE, EXPLAIN

Community garden club members view their gardens as providing them with the necessary network/social support where they share their common concerns especially in times of stresses and shocks such as illness, death and even food insecurity.

5. ARE COMMUNITY GARDENS AN INSURANCE AGAINST SHOCKS SUCH AS MORBIDITY, MORTALITY AND FOOD INSECURITY? PLEASE, EXPLAIN.

Community gardens only become an insurance against shocks such as morbidity, mortality and food insecurity when club members have adequate crops in their gardens. In this sense, the members viewed community gardens as a coping strategy.

6. IS COMMUNITY GARDENING, A COPING STRATEGY? PLEASE, EXPLAIN.

For the members, community gardening is not just a coping strategy in the sense of offering social support and an insurance/cushion against shocks and stresses such as illness, death and food insecurity, but community gardens are a core subsistence agricultural activity in the Maphephetheni uplands. Community gardens are viewed as supplementary to what community garden club members do. Hence, community gardens are both a coping and a livelihood strategy.

7. DO YOU ENGAGE IN COMMERCIAL AGRICULTURE?

No. The members unanimously answered that they do not engage in any form of commercial agriculture. Half of the members reported that they engage in home gardening in addition to community gardening.

8. ARE SICKNESS AND DEATH A THREAT TO FOOD SECURITY/COMMUNITY GARDENING? PLEASE, EXPLAIN.

Yes. Members reported spending time to caring for the sick and attending funerals.

9. IS HIV/AIDS A BIG PROBLEM IN THE MAPHEPHETHENI UPLANDS? PLEASE, EXPLAIN.

Members viewed HIV/AIDS as a big issue in the area. The members reported that there is lots of secrecy surrounding the HIV/AIDS issue. Stigma makes it hard to accept the reality of the epidemic in the lives of the households. HIV/AIDS is seen to be a moral issue and it is connected/related to sexual promiscuity. People do not want to be identified as having a household member that is sick due to HIV/AIDS. There is a sense of shame. The members also referred the stigma to issues of literacy/illiteracy People that are more illiterate deny the reality of HIV/AIDS affecting their households than literate members.

10. WHAT ARE YOUR DESIRABLE LIVELIHOOD OUTCOMES?

Irrigation systems (access to adequate water); Proper fencing of the gardens; Market to sell produce; skills training centre; clinic;

QUANTIFYING TIME SPENT ON VARIOUS ACTIVITIES:

Generally, from 06H00 to 09H00 (3 hours), members do household chores including caring for the sick members if any; from 09H00 to 14H00 (5 hours), members engage in community garden activities; from 14H00 to the rest of the day (19H00) (5 hours), members continue to do household chores. This is repeated 5 days per week. On week ends, members attend different meetings including funerals.

Notes:

1. Siphesihle and Vuswaindlala community gardens are no more existing independently. They joined other community gardens.
2. Siyjabula and Siyazama were not presented by any member. The possible explanation is the long distance from these to the venue of the meeting.

NB- NEXT STEP:

TO PRESENT THE FINDINGS AND RECOMMENDATIONS TO CHIEF GWALA AND LOCAL COUNSELLORS TO SEE HOW THEY CAN MAKE USE OF THE FINDINGS FOR THE BENEFIT OF THE COMMUNITY GARDEN MEMBERS IN THE MAPHEPHETHENI UPLANDS.

21/06/2006 Study Results were presented to Maphephetheni chief and Local Councilors, namely:

Chief T.F Gwala

Mr. N. Shezi (0735753665)

Mr. E.B. Gwala (0734018751)

Mr. P. Gwala

Mr. T.A. Gwala

Ms. Nonhlanhla Nyongwane (Court Secretary).

APPENDIX H: A summary of study findings translated into Zulu for use by the study sample and the chief of Maphephetheni for community development initiatives as an advocacy tool

**UMBIKO OTHOLWE KWIMIPHUMELA YOCWANINGO LOMTHELELA WOKUGULA NOKUSHONA
EKUGCINENI UKUDLA KWANELE KANYE NAMASU ABESIFAZANE OKUBHEKANA NEZIKHATHI
EZINZIMA ENDAWENI YASENHLA NASEMAPHEPHETHENI, EMAKHAYA AKWAZULU-NATAL¹**

Samuel Mpeleka Chingondole

June 2006

Food Security Programme,
School of Agricultural Sciences and Agri-business,
faculty of Science and Agriculture,
University of KwaZulu-Natal,
Pietermaritzburg Campus

UMPHATHI WOCWANINGO: Prof. S L Hendriks
USEKELA-MPHATHI WOCWANINGO: Prof. J M Green.

¹ Le ndashana ithathwe kumqulo wezifundo zePhD ezenziwe enhla eMaphephetheni, futhi luhlose ukuba lusetshenziswe ababe hlanganyele kulolucwaningo, inkosi kanye namakhansela endawo aseMaphephetheni njengethuluzi kwiminyango kaHulumeni yezolimo, yezeNhlala-kahle nezeMpilo ekuthuthukiseni ezomnotho nezenhlalakakhle endaweni yaseNhla eMaphephetheni ezingadini zomphakathi.

1. Isingeniso

Imizamo kahulumeni yokulwisana nembangela noma imiphumela yokugula nokufa ayiphumeleli ngenxa yokungabikho kocwaningi olwanele ekutheni kwaziwe amasu abantu besifazane okumelana nezikhathi ezinzima. Esimeni sesandulela ngculazi ne- nengculazi, kubalulekile ukuba siqonde amasu asetshenziswayo ukumelana nezikhathi ezinzima ukuze sikwazi ukuletha usizo olufanelekile. Le-ndatshana ithula imiphumela yocwaningo olwenziwa phakathi kuka-September no-October onyakeni ka-2003, 2004 kanye no-2005. Ucwano luyhenye ngezinkinga zokugula kanye nokushona ekutheni imindeni izigcine inokudla okwanele futhi okunomusoco, kanye namasu asetshenziswa abesimame okubhekane nezikhathi ezinzima abangamalunga ezingadi zomphakathi nemindeni yabo endaweni yasehla naMaphephetheni. Ucwano lwenziwe kulezingadi ezilandelayo: iBhekokuhle, Enkululekweni, Enkanyezi, Siphamandla, Siphesihle, Siyajabula, Siyazama, Sizathina, Thathani neVuswayindlala.

Ucwano lubheke izinto noma imibuzo eyihlanu ebalulekile, ikakhulukazi:

1. Ukubaluleka kwezingadi zomphakathi ekuqinisekeni ukudla nokuziphilisa okunesisekelo.
2. Ukubaluleka kwabesifazane emindeneni yasemakhaya nase-kukhiqizeni ukudla kokuziphilisa
3. Ezenhlalakahle nomnotho ezithinhwa ukugula nokufa kumuntu ngamunye, imindeni kanye nomphakathi;
4. Ubunzima obudalwa ukugula kanye nokushona ekusebenzeni izingadi
5. Izindlela noma amasu asetshenziswa abesifazane ukuze bamelane nokugula kanye nokushona ukuze bazigcine benokudle okwanele ekhaya.

Le-ndatshana ichaza izinto ezintathu ezibalulekile. Okuqala, iphetha lolucwano ngoku-goqa imiphumela ngokuhambisa nemibuzo eyisihlanu njengoba kushiwo ngenhla. Okwesibili, kuzokwenzwa inzinto zenzakubo mgomo emayelana nalolucwano. Ekugcineni, le-ndatshana iphetha ngokuchaza okumele kwenziwe ngocwano olungaphinde lwenziwe.

2. Imiphumela okuyiyonayona kanye neziphetho

Imiphumela kanye neziphetho zocwano ziphuma kulemibuzo eyisihlanu eshiwo ngenhla.

2.1 Izingadi zomphakathi kanye nezindlela zokuziphilisa endaweni yasehla eMaphaphetheni, emakhaya aKwaZulu-Natal

Umbuzo wokuqala woncwanningo: Iyiphi ingxenye edlawa izingadi zomphakathi ekuqinisekeni ukuthi imindeni inokudla okwanele nokunomsoco ngaso sonke isikhathi kanti futhi iyakwazi ukuziphilisa endaweni yasenhla eMaphephetheni, emakhaya aKwaZulu-Natal?

Ukuze kuphethwe ngokuthi izingadi zomphathi zibalulekile yini ekuziphiliseni komphakathi wasemakhaya njengalowo osendaweni yasenhla eMaphephetheni, noma izingadi zimane ziyindlela yokubhekana nezikhathi ezinzima lapho kunokugula noma ukushona, kuye kwafanele ucwanningo lubheke ingxenye edlalwa yizingadi zomphakathi njengento ebalulekile ethinta ukugula kanye nokushona. Ngako-ke, ukubhekisisa ingxenye edlalwa izingadi zomphakathi ekuziphiliseni kwemindeni emakhaya, umthelela wazo ekungeniseni imali ekhaya, izenzo ezingenisa imali ngaphandle kokulima kanye nokuthi ukudla kuqhamuka kuphi futhi nesisekelo sezenhlalakahle kuzobhekisiswa kahle.

Ngaphambi kokuhlolisisa umthelela wezingadi zomphakathi, amalungu amaqembu ezingadi akhomba izinto ezibalethela izinkinga ekuqhubeni kwabo izingadi, yilokhu okwavela:

- ✚ ukushoda kwezindawo zokuqeqeshwa, lokho ukungathuthuki komnotho ongahlanganisi ezolimo;
- ✚ ukushoda kwabasebenzi noma izandla ngenxa yokugula nokushona;
- ✚ ukushoda kolwazi, amakhono kanye nesipiliyoni mayelana nezolimo;
- ✚ isihlabathi esinganonophele;
- ✚ izinto ezithinta izulu njengokungabi khona kwemvula eyanele (imifula eyomile);
- ✚ ukushoda kwezinto zokulima njengembewu, amathuluzi okulima ngenxa yemali encane engena ekhaya okuye kwabikwa;
- ✚ ukungabiyelwa, ngakho-ke inkinga yemfuyo efana nezinkomo, izimbuzi kanye
- ✚ nokhula, izinambuzane nezifo.

Izitshalo ekuyizona zona ezibikiwe ukuthi zilinywa endaweni yasenhla eMaphephetheni ezingadini zomphakathi zihlanganisa *amadumbe*, ubontshisi, ubeetroot, ikabishi, ukherothi, ugreen pepper, umbila, u-anyanisi, isipinashi, ubhatata notamatisi.

Imiphumela ebheke umthelela wezingadi zomphakathi ekuziphiliseni kwasemakhaya iye yathola, ngokuhambisana nomthelela wemali engena ekhaya nyanga zonke, izinqubo zokuziphilisa ezingahlangene nokulima ezinikela kakhulu kwimali engena ekhaya kunaleyo engeniswa izingadi zomphakathi endaweni yasenhla eMaphephetheni, kanti amalungu amaqembu ezingadi kanye nemindeni yabo ziye zasebenzisa izindlela ezihluka hlukene zokungenisa imali ukuze bangaziphilisi ngokulima kuphela. Le miphumela iye yaveza ukuthi ukuze baziphilise abahlala emakhaya aseNingizimu basebenzisa izindlela ezihluka hlukene zokungenisa imali.

Nomakunjalo, ukusebenza ngezingadi zomphakathi njengesivandi zokudla kanye nendlela yokuthola imadlana, lolucwaningo luthole ukuthi izingadi zomphakathi enhla nase-Maphephetheni zibalulekile njengezindlela zokuziphilisa, ikakhulukazi njengezivandi zokudla ezikhathini ezinzima zokugula kanye nokushoan kwabantu. Lokhu kusho ukuthi ukulima kungenye yezindlela ezibalulekile zokuziphilisa emndenini yasemakhaya kodwa hhayi ngendlela yokuthola imali. Lemiphumela iveza impikiswano ekhona mayelana nokuthi ukulima kunawo yini amathuba okunika indlela yokuphila emphakathini waseningizimu ne-Afrika. Nakuba izingadi zinathuba okuthi zibe izindlela zokuziphilisa endaweni yasenhla namaphephetheni ezikhathini zokushona kanye nokugula, nezinye izinto ezingahlangene nokulima nazo zibalulekile kakhulu njengezindlela zokuziphilisa ngoba zisnikeza imali kanye nokudla. Lulucwaningo luphethe ngokuthi, ukunakekela ukulima kanye nezinye izindlela ezingahlangene nokulima kudala amalunga ezingadi ukuthi bakwazi ukumelana nobunzima bokugula kanye nokushona, ngoba kunikeza imindeni imali kanye nokudla.

2.2 Ukubaluleka nomsebenzi wabesifazane ezingadini zomphakathi kanye nezindlela zokuziphilisa emakhaya.

Umbuzo wocwaningo wesibili: Kungabe abesimame basemakhaya, ukudla, izindlela zokuziphilisa, ukugula nokufa kuhlalane kanjani?

Kuze uthole izinto ezidalwa ukugula noma ukushona ezindleleni ezisetshenziswa abesifazane bezingadi zomphakathi emaphephetheni, lokucwaningo lubheka ighaza nokubaluleka kwabantu besifazane kwezolimo. Ighaza labesifazane libokala ngokumbandakanya kwabo emisebenzini ephathelene nokulima kanye neminye engahlangene nokulima, njengokwenza imisebenzi yasekhanye.

Ucwaningo luthole ukuthi amalunga ezingadi zama-vegithibuli (vegetable) kanye nabanye besifazane bebezibandakanye ezingadini zomphakathi futhi benza imisebenzi eyahlukahlukeni, njengokuthi balungise imhlabathi yalapho belima khona, bachelele, batshale, bahlakule, balungise izitshalo

zokudla, bavune, badayise ukudla kwasezingadini, bagade abagulayo, bakhe amanzi, batheze izinkuni, bahlanze umuzi, bawashe izitsha, bapheke, bakhande omata, badayise imithi nezinkuni, bathunge, bakhande imishanelo kanye nezindlu. Lokhu kusho ukuthi umthelela wabesifazane kwezolimo nasezintweni ezingahlangene nokulima uhlukene futhi umbandakanya imisebenzi eminingi. Ngakho-ke lolucwaningo luphetha ngokuthi, abasifazane basemakhaya babaluke kakhulu emindeni ekuthenini baqinisekise isimo sokudla okwanele ngaso-sonke isikhathi. Phezukwalokho, ucwaningo luphetha ngokuthi abasifazane bangumgogodla yemindeni futhi yibona abaqinisekisa isimo esanele sokudla emndenini. Kodwa-ke umthelela wabesifazane kwezolimo ucekelwa phansi ukugula nokushona.

2.3 Ushintsho ngenxa yokugula kanye nokushona

Umbuzo wocwaningo wesithathu: Kungabe ukugula kanye nokushona kuziphazamisa kanjani izingadi nezindlela abaziphilisa ngazo labo abangamalunga ezingadi zomphakathi endaweni yasemaphephetheni, KwaZulu-Natal?

Ukuthola ububi obudalwa ukushona nokugula kubantu besifazane nakulezinto abazisiza ngazo kuze bamelane nesimo esibi, lolucwaningo lubheke ukuthi kungabe ukugula nokushona kuletha luphi ushintsho kulabo abangamalunga ezingadi kanye nasemindenini yabo endaweni wasemaphephetheni.

Ucwaningo luthole ukuthi ukugula kanye nokushona kuyakhula endaweni yasenhla namaphephetheni. Maningi amalungu ezingadi kanye namalunga emindeni agule ngonyaka ka-2004 kunalowo agule ngonyaka ka-2003. Ucwaningo futhi luthole ukuthi izindleko zokugula kany nezokuncwaba nazo zikhuphukile phakathi kweminyaka emibili yocwaningo. Kodwa-ke ucwaningo kuveza ukuthi amalunga ezingadi ancike kakhulu ekininikhi ehambayo

(mobile clinic) ukuze bathole imithi yokuziphilisa. Ikinikhi ehambayo edlula njalo ngeviki, kodwa ngonyaka ka-2003 isuke ku 86 percent yaya ku-66.7 percent ngonyaka ka-2004. Lokhu kusho ukuthi abantu abaningi abagulayo ngonyaka ka-2004 uma ughathanisa nonyaka ka-2003 bese besebenzisa imali ukude bazilaphe. Ngendlela efanayo ucwaningo luphinde lwathola ukuthi ukunakekela abantu abagulayo kukhuphukile ngonyako ka-2004 kunawo ka-2003, lokhu kusho ukuthi abantu abaningi bathethe isikhathi saba banakekela labo abagulayo. Ucwaningo luphinde lwathola ukuthi zindlela zokunakekela abagulayo bezechukene ngesikhathi kade kweziwa ucwaningo futhi imindeni eyayibhekene nenkinga ibizamisile ukuthi ibike izinhlobo zezifo ngesikhathi kwenziwa ucwaningo.

Phezukwalokho, ucwaningo lukhombise ukuthi kunobudlelwane obuhle phakathi kweminyaka kanye nempilo, ubulili. Ngalandlela, ucwaningo luthole ukuthi amalunga ezingadi kanye namalunga emindeni aphakathi kweminyaka engu 17 no 55 avamise ukugula futhi abesifazane bona bagula kakhulu uma begathaniswa nabesilisa. Ucwaningo luthole ukuthi imbangela yokushona bekuyi TB, isifo sohudo, Ukugodola kakhulu (Pneumonia) kanye nekhensa yesikhumba. I-TB yona ibulala abantu kakhulu kunezinye izifo.

Ngenxa yemiphumela yalolucwaningo, Ucwaningo luphethe luthi ukugula nokushona kuletha umthwalo onzima kumalunga ezingadi nasemindenini yawo, nokuthi ukugula kanye nokushona kungahle kuphazamise izingadi zomphakathi neminye imisebenzi engahlangene nezolimo, lokho kuzodala ukuthi izitshalo zibe ncane nendlela yokuziphilisa ingabi yionhle. Ukukhula kokugula kanye nokushoana kungahle kwenze abanikazi bezingadi balambe kakhulu ngenxa yokuthi amanikazi bezingadi bathola imali yokukhokhela imtholampilo, iminewabo no ukudla ukuze bakwazi ukuziphilisa, ezingadini. Izikhathi eziningi ukugula nokushona kuziwa yilabo abahlaselwe yigciwane lengculazi kanye nesandulela ngculazi ngenxa yokuthi ezinye izifo zithola intuba yokungena kubo. Kusobala ukuthi umthwalo yokugulelwa nokushonelwa udala isimo esingasihle kahle emndenini.

2.4 Umthelela wokugula nokufa kwabantu ezingadini zomphakathi, izinto ezikhona emphakathini kanye nasezindleleni abazisebenzisayo ukumelana nezimo (Coping strategies).

***Umbuzo wocwaningo wesine (Research question four):** Iziphi izindlela ukugula kanye nokushona okuthusa ngazo ukulima kwabesifazane basemakhaya*

***Umbuzo wocwaningo wesihlanu (Research question five):** kungabe ukushona nokugula kunamuphi umthelela ezindlela ezisetshenziswa ngabantu ukumelana nezimo(coping strategies)*

Ucwaningo lugxile kakhulu ekutheni yimiphi imithelela edalwe ukugula nokushona kulokhu okulinywa abantu besifazane kanye nasetheni kubenamuphi umphelela ukugula nokushona ezindleleni ezisetshenziswayo ukumelana nezimo (coping strategies) endaweni yasemhla naseMaphephetheni. Ucwaningo luthole ukuthi ukugula nokushona kunomthelela omubi ekukhiqizweni kokudla ngenxa yokuthi kuvimbela amalunga ezingadi ekutheni asebenze ngendlela eqotho ezingadini zabo. Ngakho-ke, kuthiwa ukugula nokushona kunciphise abasebenzi basezingadini futhi

kwaba neminye imithelela ehlukahlukene enzuzweni yemindeni ngenxa yokukhokhela usizo lwezempilo kanye nemincwabo. Ukugula nokushona kunomthelela omubi ezitweni ezikhona ezingasetshenziswa ukukhiqiza ezinye ezinto (capital) njenge mvelo, abantu, kanye nezenhlakahle.

Ucwaningo luthole ukuthi amalunga ezingadi kaye nemindeni yabo ibinenzuzo encane kanye nezinto ezincane. Ucwaningo lukhomise ubudlelwana obubonakalayo phakathi kwesimo sempilo yamalunga ezingadi kanye nemindeni yabo, uma kughathaniswa inzuzo yenyanga kanye nemali itholakala kwezenhlala kahle nokuthi imindeni incike kakhulu emalini yezenhla kahle. Kodwa-ke, ucwaningo luthole ukuthi kukhona abebengayiyholi imali yezenhlala kahle ngenxa yokuthi abanalo ulwazo ngazo. Ucwaningo luthole ukuthi ukugula nokushona kuphoqe amalunga ezingadi nemindeni yabo ukuthi bashintshe inzuzo yabo encane bayise ezindlekweni zemincwabo kanye nemitholampilo. Ngenxa yenzuzo encane etolwa amalunga ezingadi, abanengi babo babe sebeboleka imali, basebenzise imali egciniwe kanye nokudayisa infuyo. Lolucwaningo luphinde lwathola ukuthi amalunga ezingadi kanye nabemindeni yabo bezwe utshintsho kwinzuzo etholakala eziphweni, ezenhlala kahle kanye nenzuzo abayithola kwezinye izinto ezingewona umsebenzi ngenxa yoshintsho olwenzeka emindenini ngenxa yokugula nokushona. Ngokufanayo, ucwaningo izinto onazo zakho, ukugula kanye nokushona bekuhlanganisiwe futhi ukugula nokushona kuhlukanise izinto zamalunga ezingadi, lokho kukhulisa amathuba okuthi amalunga ezingadi abe sengozi yokugula nokushona ngenxa yokuthi babe sebesenzisa izindlela eziyingozi ukuzikela ezimweni. Ukuhamba kwabantu endaweni ngenxa yokungabi nacho ukudle okwanele akuvamisile endaweni yasehla nasemaphephetheni.

Ucwaningo luthole ukuthi amalunga ezingadi isikhathi esiningi uma enganakho ukudla badla imbevu ade beyibekela ukulima ngayo ngonyaka olandelayo, elinye isu abalisebenzisayo ukudla ukudla okushibhile noma ongathandi ukukudla, Ukunciphisa inani lokudla kanye nokunana ukudla

komakhelwane nasezihlobeni. Okuthokozisayo ukuthi ucwaningo luthole ukuthi abanga phezu kuka 80% kulemindeni ekhethiwe, abazisebenzisi izindlela ezimbi kakhulu ukumelana nezimo, njengokungadli usuku lonke, nokunika ukudla labo abasebenzayo uncishe lapo abangasebenzi. Ucwaningo luthole ukuthi umangabe isikhathi esichithwa emicwabeni besinizwa ivelu, Imali yokushona nokugula ingaba nkulu kakhulu.

Ngenxa yalemiphumela, Kuye kwaphethwa ngokuthi kubalulekile ukuba nomnotho owanele ukuze ukwazi ukumelana nezimi zokugula kanye nokungabi nacho ukudla okwanele. Kuphinde kwaphethwa ngokuthi imali yezenhlala kahle ibalukile ekuthenine abantu bakwazi ukumelana nemithelela yokugula nokushona nezinye izinto ezingezinhle kanye nokungabi nacho ukudla okwanele.

3. Izincomo zengqubo mngomo

Kuyafaneleka kule sikhathi ukwenza izincomo mayelana neziphetho kanye nemiphumela ekufinyelelwe kuyo kwimthelela yokugula nokufa ezindleleni zabesimame abasemakhaya abazisenzisayo ukuze babhekane nezikhathi ezinzima. Lokhu kuthinta izihloko zabesimame kanye nezinkinga zobulili, imindeni, uhulumeni kanye nezinhlango ezingekho ngaphansi kwahulumeni.

3.1 Abasefazane kanye nezinkinga zobulili

Eningizimu izingqubo mngomo zobulili zezwe lonke ziphoqa izikhungo ukuba zakhe umoya ovumela abesifazane ukuba bahlanganyele kwizingqubo zolimo kanye nekungezona ezolimo. Kepha, kunokuqhelelana kwezingqubo mngomo kanye nokulandelwa noma ukuqhutshwa kwazo. Lezingqubo mngomo zinhle futhi zifanelekile ekuthuthukiseni ukwanda kokudla kanye nezindlela zokuziphilisa ezinesisekelo okuzophinda kusize imindeni ukuba ikwazi ukumelana nemiphumela yokugula nokufa. Inkinga ivela lapho sekufanele ilandelwe. Ngakho-ke, ukuze izingqubo mngomo zithuthukise izindlela zokuziphilisa ukuze kubhekwane nemiphumela yokugula nokufa kangcono, ezolimo kanye nezingadi zemphakathi okungenye yemiphumela, kumelwe kubhekwe ukungalingani kwamandla phakathi kwabesifazane nabesilisa. Abesilisa banamandla kakhulu kunabesifazane ekuthatheni izinqumo mayelana nokwabelwana kwemisebenzi. Kunesidingo sokuthi uhulumeni kanye nezikhungo ezingekho ngaphansi kukahulumeni ukuba bahlanganyele kanye nabesilisa ukuze baqonde ukuthi ukulima njengedlela yokuziphilisa ikakhulukazi izingadi zomphakathi akuwona umsebenzi

wabesifazane kuphela, kodwa nabesilisa banenxgenye ebalulakile ekumele bayidlale ukuze babe nomthelela ezindleleni zokuziphila ezinesisekelo emakhaya ngoba ukuba khona kwezingai zomphakathi akuve kungenxa yokuzuza kwesintu kuphela lapho kubhekwa khona izinkinga zobulili, kodwa zingakwazi ukungenisa imali ekhaya kanye nokudla okumqoka ekubhekaneni nemiphumela enzima yokugula nokufa. Kucabangwa ukuthi ukuhlanganyela okulingene noma okwandile kwabesilisa kwezolimo kanye nasezintweni ezingahlangene nezolimo ekuziphiliseni zingasiza abesifazane ekunciphiseni ubunzima obulethwa isandulela ngculazi nengculazi eholelela ekuguleni nasekufeni, lokhu kuye kwaletha ushintsho kwezenhlalakahle nezomnotho.

3.2 Imindeni

Imindeni kumelwe ize kuqala kwingqubo mgomo yokuthuthukisa isintu nezimali. Ekubhekeni ukuhlupheka kanye nokuthambekela ebunzimeni okufana nokungabi khona kokudla okwanele, ukugula nokufa, umndeni uyisikhungo esincane kunazo zonke ekumele ucwaningo kanye nezinhlelo zosizo zigxile khona ukwenza isimo sibe ngcono. Imindeni ibalulekile ngoba umnotho okhiqizwa abantu (ehlenganisa ulwazi, amakhono, isipiliyoni kanye nezinsebenzi), umnotho wezenhlalakahle (kuhlenganisa izisekelo zezenhlalakahle), umnotho wezezimali kanye nomnotho okhiqizwe izinto ezibonakalayo. Ngakho-ke kungaphakamiswa ukuba imindeni kanye nobudlelwane obukhona ezindleleni zokuziphilisa, kumelwe kuhlolisiswe. Esimeni sesandulela ngculazi nengculazi, kubalulekile ukuthatha ulwazi lwezinhlobo ezintsha zemindeni eqhamukayo njengaleyo ekungabesifazane nezingane izinhloko zemindeni. Ngoba kunokunganeli kolwazi ngaluluhlobo lemindeni, ubunzima ababhekana nabo, amathuba abanawo kanye nezinqubo mngomo zesintu eziphathelele nabo, ucwaningo oluqhubekayo luyancomeka.

Futhi, kubalulekile ukuba izikhungo zikahulumeni ziqaphele ukuba sengcupheleni yokuthelelwa okukhulu okubangelwa ubumpofua kanye nokungalingani. Ukugula nokufa okubangelwa isandulela ngculazi nengculazi kuye kwaholela ekutheni imindeni ihlupheke futhi ishiye amalungu emindeni lawo angenamandla esengozini emva kokulahlekelwa izinto ezikhiqiza umnotho. Kubalulekile ukuthola izindlela zokuqinisa izisekelo zangaphakathi ekhaya nangaphandle kwekhaya. Imali etholwa kuxhaso lukahulumeni lwezenhlalakahle ingasetshenziswa ukukhokhela imithi kanye nokudla. Futhi uxhaso lukahulumeni lwezenhlalakahle lungasiza ekuvikelekeni izindleko ezandayo uma lowo ongenisa imali ekhaya engasakwazi ukondla umndeni, ngenxa yokugula noma ukufa. Ngako-ke, imali etholwa kuxhaso lukahulumeni lwezenhlalakahle kumelwe iphathwe ngokukhulu

ukucophelela ukuze ingabhekeli phansi ezinye izinqubo zokuziphilisa. Imali etholwa kuxhaso lukahulumeni lwezenhlalakahle kumelwe ibe ingxenye yesikhwama esikhiqiza umnotho, ukuqeqeshwa kwamakhona emisebenzi, umnotho ozothuthukisa imindeni yasemakhaya ngaphandle kokwenza imindeni ingakwazi ukuzimela.

Kubalulekile futhi ukunaka ukuthi kunezinhlalo ezimbili zezindlela zokunciphisa imiphumelo: ukunciphisa ukuthintwa ukugula nokufa; ukunciphisa umuphumela yezindela zokuziphilisa emakhaya. Imiphumela yokugula nokufa eseduze, ukulahlekelwa umsebenzi, izindleko zokunakekelwa kwempilo kanye nemingcwabo kungaholela imindeni ukuba ihlupheke. Imingcwabo, ukugqiba kanye nokuzila kuyabiza uma sibheka imali kanye nesikhathi,

kwenze imindeni ezilile ingakwazi ukusimama. Ngako-ke kumele kwande izinkulumo phakathi kwemindeni, imiphakathi kanye nezikhungo zamasonto, zolimo, ezocwaningo kanye nezempilo nezinhlangano ezingekho ngaphansi kukahulumeni ukuze kuhlolwe imiphumela yokungcwaba, ukugquba nokuzila futhi kutholwe ezinye izindlela. Ukugula nokufa okubangelwa isandulela ngculazi nengculazi kuye kwathinta ukuba khona kwezandla emindenini. Ukuqasha abasebenzi kuye kwaba indlela engcono uma umndeni unazo izindlela zokukhoka.

3.3 UHulumeni kanye nezinhlangano ezingekho ngaphansi kukahulumeni

Ukungabi khona kocwaningo olwanele mayelana namasu okumelana nesimo sokungabi khona kokudla okwanele eNingizimu kuye kwaba inkinga enkulu ekuthuthkiseni usizo oluyisisekelo oluzobhekana nesandulela ngculazi kanye nengculazi okuholela ekugulani kanye nasekufeni. Izikhungo zocwaningo, kuhlanganisa iminyango kaHulumeni yezolimo kanye neyzezhlalakahle zidinga ukuqinisekisa ucwaningo oluqhubekayo ukuze kuqondakale umthelela wokugula kanye nokufa emindenini yasemakhaya, ikakhulukazi kwabesifazane abahlanganyela ezingadini zomphakathi (ukulima njengendlela yokuziphilisa) kanye nasesindleni zokuziphilisa ezingenisa imali. Lokhu kungaholela ekuhotleni usizo oluyisisekelo oluzothuthukisa umnotho emindenini esezindaweni ezisemakhaya eNingizimu. Lemizamo ingaholela ekutheni imindeni ikwazi umelana noshintsho olubangelwa ukugula nokufa ngenxa yesandulela ngculazi nengculazi.

UHulumeni kudingeka athuthukise izinto ezenziwa abantu ukuze baziphilise ngaphandle kokulima noma amabhizinisi amancane, ikakhulukazi lawo athinta ingxenye yezolimo. Ukuqedwa kokuhlupheka kuzosiza ekutheni imiindeni ikwazi ukuzivikela kangcono kwimiphumela yokugula nokufa.

Lokhu kuhlanganisa ukwenza ukulima kube usizo ngokunika amakhono ezolimo adingekayo kanye nezinto zokulima ezifana namaphakethe ezimbewu, izinto zokuchela kanye nokubiyelwa kwezingadi zomphakathi njengendlela yokuzivikela ekugcogcomeni kwemfuyo, nokuvula amathuba ezindlela zokuziphilisa ezihluka hlukeni. Ngokwesibonelo, izinto ezenziwayo zokugcina ukuba khona kwamanzi nokuhlanzeka endaweni yasenhlalale eMaphephetheni zibonakale zidlala indima ebalulekile ekuvuleni amathuba emisebenzi yesikhashana noma amathuba okuzisebenza okuzobuyela kulethe imali ekhaya. Ukunenzela, ukuba khona kwezindawo zokuboleka izimali kubalulekile ekuwenzeni ngcono isimo sezingadi zomphakathi kanye nezinto ezingenisa imali ezingahlangene nokulima ukuze imiphula yokugula nokufa ube ngcono, futhi kugcunwe izindlela zokuziphilisa ezihluka hlukeni. Endaweni yasenhlalale eMaphephetheni izitokufela kanye namaqembu omasincabisane noma awomphakathi yiwo abaluke kunawo wonke uma kuza

ekubolekeni kwezimali. Ukuba khona kwezitokufela kanye namaqembu omasinqcwabisane ayasiza ekuvaleni izindleko ezibangelwa ukugula kanye nemingcwabo ukuze imiphumela yokugula nokufa ingayithinthe imindeneni yasemakhaya. Ngakho kungaba usizo ukuqalwa komashonisa endaweni yasenhla eMaphephetheni ukuze inake ushintsho olubangelwa ukugula kanye nokufa ukuze kusizakale imindeneni yenze ngcono noma iqale ukulima njengendlela yokungenisa imali kugququzelwe izingadi zomphakathi.

Lezincomo ezingenhla zezinquba mngomo zingenza ushintsho uma kuphela uhulumeni ezilandela ngokusebenzelana eduze nomphakathi, kanye nezinhlangano zomphakathi kanye nezinhlangano ezingekho ngaphansi kukahulumeni ezibhekene nokhuphatha amafamu kanye nezindlela zokuziphilisa ezingekho emafamu ezindaweni zasemakhaya ikakhulukazi imindeneni ethinthe imiphumela yesandulela nengulazi nengculazi eholela ukugulani nasekufeni.

4. Izincomo zocwangiso oluqhubekayo

Izindawo zocwangiso olubalulekile ezigcinwe zibucayi futhi zingaxazululanga yilezi ezizolandela. Yize imiphumela yokugula nokufa iye yahlolwa ngokubheka izindlela amlungu omphakathi azisebenzisayo ukuze aziphilise, kunezikhala ezingakavaleki uma sibheka ezinye izindlela zokuziphilisa zabasemakhaya ezingathuthukisa ezolimo zasemakhaya kanye nezindlela zokuziphilisa ezingahlangene nezolimo ukuze imindeneni kanye namalungu ezingadi abhekane kangcono nemiphumela yokugula kanye nokufa. Ukuze izindlela ezisetshenziwayo zokuqoqwa kolwazi zisize kakhulu ekuthuthukiseni umnotho futhi zilethe usizo oluyisisekelo olubeka abantu phambili kufanele kubhekwe ukuthambekela kwesintu kanye nobunzima

esihlangabezana nabo. Inhloso yalezizindlela zokuqoqwa ulwazi kumele kube ukuletha ukuqonda imiphumela yokugula nokufa kwezenhlalakahle yabantu kanye nomnotho ekugcineni ukudla okwanele emindenini ngokusetshenziswa kamasu okubhekana nezikhathi ezinzima.

Ngokunezezela, kunesidingo sokusungula umnotho ozonciphisa imiphumela emibi yokugula kanye nokufa emakhaya aseNingizimu njengasenhla eMaphephetheni. Ukuthuthuka komnotho kungafanele kuvumelane nemvelo ngokuphelele ukuze kuqhathaniswe amasu asetshenziswa imindeneni ukuze ibhekane nezikhathi ezinzima futhi kutholakale izindlela izikhungo zenthuthuko kanye nezempilo ezingaqinisa ngayo ezenhlalakahle zemindeneni kanye nemiphakathi uma ibhekene nokugula kanye nokufa. Ngokufanayo, kumelwe kubhekisiswe ngokukhethekile ingxenywe edlalwa uxhaso lukahulumeni

Iwezenhlalakahle ekuletheni usizo futhi nosizo olukhona njengamanje olusiza imindeni ibhekane nemiphuela yesandulela ngculazi negculazi ebangela ukugula nokufa.

Futhi, izikhathi zokuzila ezinde zejwayelekile emakhaya akwaZulu. Kule ndawo ekuye kwenzelwa kuyo ucwaningo, izinqubo zokuzila zinemiphumela ehluka hlukenengemihle. Kunesidingo sokuqonda kangconywana ubudlelwane obukhona phakathi kwezikhathi ezinde zokuzila, amasu asetshenziswa imindeni yokubhekana nezikhathi ezinzima, ihholo, ubumpofu kanye nokugula nokufa okubangelwa isandulela ngculazi negculazi.

Kukho konke, ucwaningo kufanele lbheke ezinye izinto ezithinta izindlela zokuziphilisa zasemakhaya. Ikakhulukazi, izimpendulo zezikhungo kumelwe ziqondakale futhi zakhe amasu asetshenziswa imindeni ehlanganyela kwezolimo njengenye yezindlela zokuziphilisa ezivele zisethenziswa kwimiphumela yokugula nokufa kwezenhlalakale nomnotho. Kunesidingo sokuqoqwa kolwazi ukuze kuqondakale ukubaluleka kwezinto ezihluka hlukenengemihle ezithinta amasu asentshenziswayo okubhekana nezikhathi ezinzima kanye nokugcina ukudla okwanele fuhti okunomsoco emindenini ethintwa ukugula nokufa okubangelwa isandulela ngculazi negculazi.

Iziphakamiso

Ngokuvala le ndatshana, umcwaningi uthanda ukubonga kakhulu abantu abanengi abamsizile kulolucwaningo. Izingadi eziyishumi zomphakathi enhla eMaphephetheni ziyabongwa ngokuba ingxenye yalolucwaningo. Ngaphandle kwabo lolucwaningo belungeke lwenzeke. Kubongwa neNkosi T F

Gwala waseMaphephetheni ngokuvumela ucwaningo ukuba lwenziwe kule ndawo. uNkz. Sizani Mngomezulu noMnu. E B Gwala ngokubiza futhi baqhube imihlangano namaqembu ezingadi zomphakathi. Professor Sheryl Hendriks (umphathi wocwaningo) and Prof. J M Green (usekela-mphathi wocwaningo) bayabongwa ngokusekela ucwaningo ngezindlela ezihlukene. iNational Research Foundation (NRF) nayo iyabongwa ngokuxhasa ucwaningo ngokwezimali kanye nabasizi bocwaningi (uNksz. Gugu Sibiyi, Nksz. N Mthembu, Nksz. Nonkululeko Mthembu, Mnu. Sibahle Gcwensa noMnu. Moleka Mosisi) bayabongwa ngokuqoqa ulwazi. Shannon Moffetti wakwaUrban-Eco Development Economists uyabongwa ngokuqhophisa ulwazi, noMjabuliseni Ngidi ngokusiza ukutolika lendatshana kanye nokutolika umbiko weziphetho kumaqembu ayishumi ezingadi zomphakathi, inkosi kanye namakhansela aseMaphephetheni, noBongekile Bhengu ngokutolika lendatshana ukuze ikwazi ukusetshenziswa umphakathi.

APPENDIX I: Survey coded responses, round three of three, 2005

Maphephetheni HOUSEHOLD AND CONSUMPTION QUESTIONNAIRE 2005

The information captured in this questionnaire is strictly confidential and will be used for research purposes by staff and students at the University of KwaZulu-Natal to inform Maphephetheni uplands community garden clubs and stakeholders how they might improve their food security. Respondents do not have to answer questions – answers are voluntary. The respondent should be the *de facto* (actual) household head.

Hhnum – houshold number

Interviewer: **hhinter**

Date: **hhdate**

Respondent's name:	Hhrespm	Household number:		GPS coordinate:	
--------------------	----------------	-------------------	--	-----------------	--

hhtotno – total number in household	Write the names of all household members
--	---

	1..... HEAD	2.....	3.....	4.....	5.....	6.....	7.....	8.....	9.....	10.....
Hhtotm – total number males in household Hhtotf – total number females in household hhm0-12m – males aged 0-12 month hhf0-12m – females aged 0-12 months hhm12m-5 – males aged 1-5 yrs hhf12m-5 – females aged 1-5 yrs hhm6-16 – males aged 6-16 hhf6-16 – females aged 6-16 hhm17-65 – males aged 17-65 hhf17-65 – females aged 17 to 65 hhm+65 – males aged >65 hhf+65 – females aged >65										
1. Is Male or female Male = 0 Female = 1	<input type="checkbox"/> M <input type="checkbox"/> F	<input type="checkbox"/> M <input type="checkbox"/> F	<input type="checkbox"/> M <input type="checkbox"/> F	<input type="checkbox"/> M <input type="checkbox"/> F	<input type="checkbox"/> M <input type="checkbox"/> F	<input type="checkbox"/> M <input type="checkbox"/> F	<input type="checkbox"/> M <input type="checkbox"/> F	<input type="checkbox"/> M <input type="checkbox"/> F	<input type="checkbox"/> M <input type="checkbox"/> F	<input type="checkbox"/> M <input type="checkbox"/> F
2. If the household head is a female is she widowed? genhhhd – gender of head of household ghhfwid - If a female, is she widowed hhnores – number of member no longer resident Headache Cancer kidfail – kidney fail Accident dietb – died of TB stroke asthma	<input type="checkbox"/> Y <input type="checkbox"/> N									
3. Age in years										
4. Highest level of completed schooling or educational hhsch0yr –no of members of hh with 0 yrs schooling hhsch1yr–no of members of hh with 1 yrs schooling										

hhsch2yr–no of members of hh with 2 yrs schooling hhsch3yr–no of members of hh with 3 yrs schooling hhsch4yr–no of members of hh with 4 yrs schooling hhsch5yr–no of members of hh with 5 yrs schooling hhsch6yr–no of members of hh with 6 yrs schooling hhsch7yr–no of members of hh with 7 yrs schooling hhsch8yr–no of members of hh with 8 yrs schooling hhsch9yr–no of members of hh with 9 yrs schooling hhsch10y–no of members of hh with 10 yrs schooling hhsch11yr–no of members of hh with 11 yrs schooling hhsch12y–no of members of hh with 12 yrs schooling hhsch13y–no of members of hh with 13 yrs schooling										
5. Occupation (no in household of each) 1 = WAGE EMPLOYED WAGEMP 2 = FARMER HHFARMER hhfarmer 3 = SELF-EMPLOYED SELFEMP 4 = HOUSEKEEPER hhkeeper 5 = PENSIONER PENSIONR 6 = DISABLED DISABLED 7 = UNEMPLOYED BUT SEEKING WORK UNEMPSKW 8 = SCHOLAR SCHOLAR 9 = INFANT OR CHILD (0 – 6 YEARS) INFANT 10 = VAGRANT VAGRANT	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10
7. Wage or salary income (Rands per month) hhtotinc (no including income clearly from farming)										
7. Income from social grants ie pension, child grant, disability (rands per month) socigran										
8. Income remitted by migrants and commuters (rands per month) incmigra										
9. If the household head is a migrant or weekly commuter, who is the <i>de facto</i> household head? hhmigra – is the household head a migrant worker defactog – what is the gender of the de facto HoHH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. During the past year did any household member earn income through any of the non-farm enterprises listed below? If yes, report the income from each activity. (TOTAL AMOUNT LISTED)	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
10.1 Hiring out accommodation DELETED										
10.2 Hiring out contractor services or equipment DELETED										
10.3 Milling grain DELETED										
10.4 Baking, brewing or selling meals catering										
10.5 Building or repairing houses buildrep										
10.6 Block making, stone- or metalwork DELETED										
10.7 Hawking hawking										
10.8 Shop-keeping shopkeep										
10.9 Selling firewood sellfire										
10.10 Making furniture or handicrafts fumcraf										
10.11 Agriculture agricult										
10.12 Community Garden comgrdn										
10.13 Selling of traditional medicine sellmuti										
10.14 Other – please specify Sewing Domwrker – domestic worker Notspec – not specified Roadbld – roadbuilding										

11.1 Does have a savings account (i.e. bank, post office, stokvel etc)? If yes, please provide the following information: Hhsaving – number in household with savings	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
11.2 Current level of savings (Rands) Currsavn										

12 Income shocks

How does the household cope with major income shocks (e.g. drought, death of a bread winner, job loss, etc.) (Please tick where appropriate)

Sell livestock Ossells	<input type="checkbox"/> Y <input type="checkbox"/> N
Sell other assets Isselloa	<input type="checkbox"/> Y <input type="checkbox"/> N
Use own cash savings Issaving	<input type="checkbox"/> Y <input type="checkbox"/> N
Borrow money from relatives Isborrel	<input type="checkbox"/> Y <input type="checkbox"/> N
Borrow money from stokvel Isborsv	<input type="checkbox"/> Y <input type="checkbox"/> N
Receive help from friends or relatives Ishlpoth	<input type="checkbox"/> Y <input type="checkbox"/> N
Take on additional work ismorwrk	<input type="checkbox"/> Y <input type="checkbox"/> N

Reduce spending isdecspn	<input type="checkbox"/> Y <input type="checkbox"/> N
Reduce food consumption isdeccon	<input type="checkbox"/> Y <input type="checkbox"/> N
Reduce or stop debt repayments isstppay	<input type="checkbox"/> Y <input type="checkbox"/> N
Other: Please specify	<input type="checkbox"/> Y <input type="checkbox"/> N

13. Which months of the year did your household: (Tick the appropriate boxes)

	Aug 04 aug	Sept 04 sep	Oct 04 oct	Nov 04 nov	Dec 04 dec	Jan 05 jan	Feb 05 feb	Mar 05 mar	Apr 05 Apr	May 05 may	Jun 05 jun	July 05 jul
Experience hunger? hungr	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. In this section, we look at the patterns of food **consumption for all resident household members**. This should include all the food they have eaten. It should not include food that has been bought for resale or exchanging for commercial purposes. Below is a list of different kinds of food that people may have eaten in the past **MONTH**.

Food Item	Was [..] eaten by this household in the past month? Yes No	If yes, what was the value of [..] eaten from <i>purchases</i> in the past month? Rand	What was the value of [..] eaten received as <i>gifts</i> in the past month? Rand	What was the value of [..] eaten received as <i>payment</i> in the past month (including rations)? Rand	What was the value of [..] eaten from the community garden in the past month? Rand	What was the value of ...eaten from the home garden in the past month. Rand	What was the value of [..] eaten from other own <i>production</i> in the past month? Rand
Maize grain / samp	maizeat	Maizvalu	maizgift	maizpay	comg	home	Maizownp
Mealie Meal / Maize Flour meal	eat	Valu	gift	pay			

Rice rice	eat	Valu	gift	pay			
White / Brown Bread bred	eat	Valu	gift	pay			
Wheat Flour flou	eat	Valu	gift	pay			
Breakfast Cereal – cornflakes, oats cerl	eat	Valu					
Dried Peas / Lentils / Beans drdp	eat	Valu	gift	pay	comg	home	Ownp
Potatoes pot	eat	Valu	gift	pay	comg	home	
Tomatoes tom	eat	Valu	gift	pay	comg		
Sweet Potatoes spt	eat	Valu	gift		comg	home	
Madumbes mad	eat	Valu	gift		comg	home	Ownp
Vegetable Oil oil	eat	Valu	gift				
Peanuts/ Other nuts pean	eat	Valu	gift	pay	comg	home	
Peanut butter pnb	eat	Valu					
Margarine/Butter / Other Fats marg	eat	Valu					
Cheese ches	eat	Valu					
Jam jam	eat	Valu					
Fresh Milk/ Steri Milk / UHT milk	eat	Valu					
Sour Milk/ Maas/ Yoghurt maas	eat	Valu					

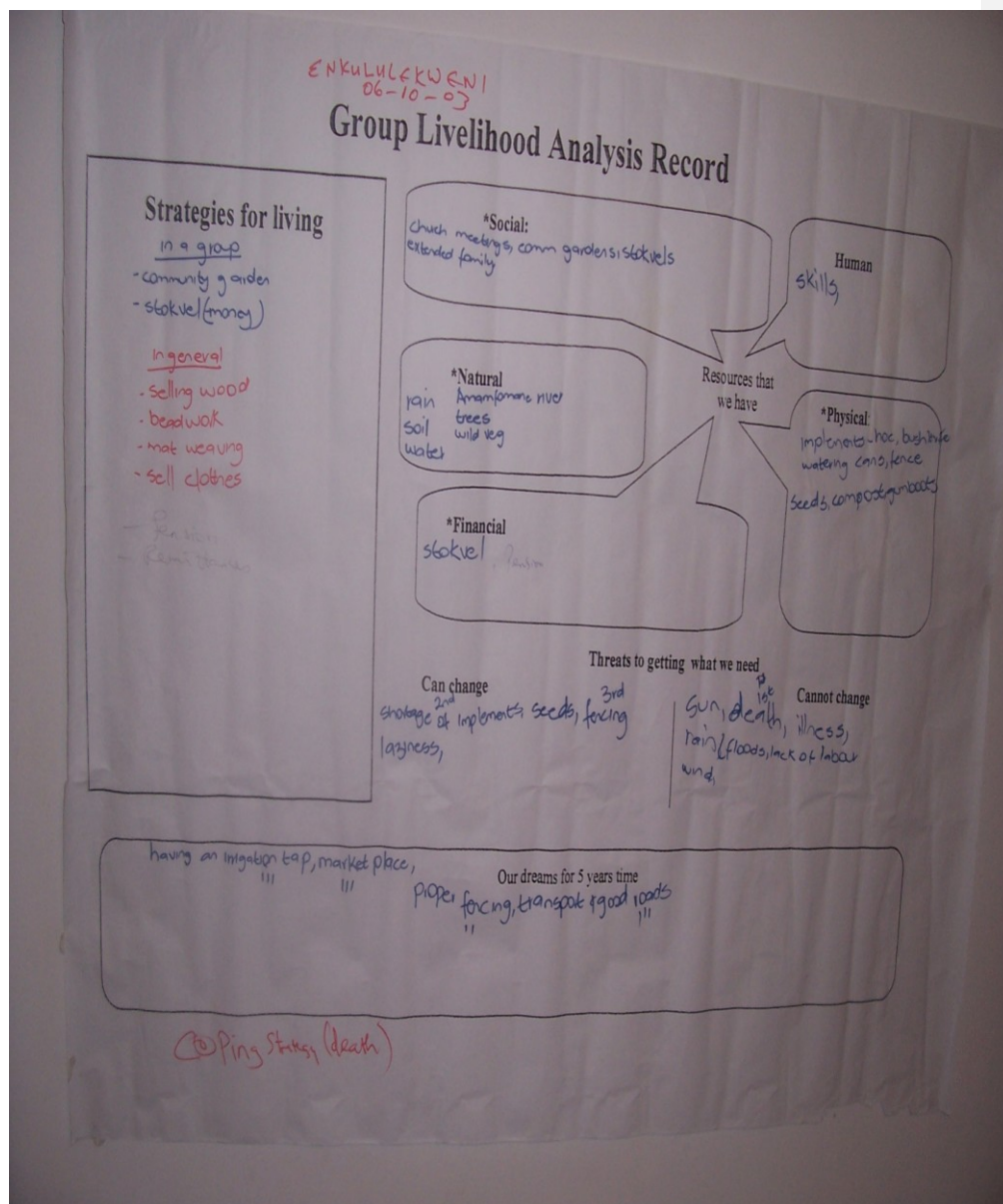
Food Spending and Consumption (Continued)

Food Item	Was [..] eaten by this household in the past month?		If yes, what was the value of [..] eaten from purchases in the past month? Rand	What was the value of [..] eaten received as gifts in the past month? Rand	What was the value of [..] eaten received as payment in the past month? Rand	What was the value of [..] eaten from the community garden in the past month? Rand	What was the value of ...eaten from the home garden in the past month. Rand	What was the value of [..] eaten from other own production in the past month? Rand
	Yes	No						
Baby Formula baby	Babyeat		babyvalu					
Milk Powder/coffee creamers mlkp	Eat		valu		pay			
Sugar sug	Eat		valu	gift	pay			
Mutton / Beef / Pork / Goat meat meat	Eat		valu	gift	pay			
Tinned meat / Processed meat / Polony tinm	Eat		valu					
Offal ofal	Eat		valu	gift				
Chicken chic	Eat		valu	gift	pay			
Eggs egg	Eat		valu					
Fresh Fish ffsh	Eat		valu					
Tinned Fish tfsh	Eat		valu					
Pumpkin / squash pumk	Eat		valu	gift	pay	comg	home	
Green mealies gmea	Eat		valu			comg		
Green vegetables / Tinned vegetables gveg	Eat		valu	gift	pay	comg	home	
Carrots and beetroot / Tinned vegetables carr	Eat		valu	gift		comg		
Other vegetables / Wild vegetables / Imifino othv	Eat		valu			comg	home	
Bananas ban	Eat		valu	gift	pay	comg	home	
Apples, peaches, guavas etc. appl	Eat		valu	gift				
Citrus fruit (orange, lemon, nartjies) citr	Eat		valu	gift	pay			
Soft drinks (Coke etc) sftd	Eat		valu	gift	pay			
Tinned fruit tfru	Eat		valu	gift				

Meals prepared outside home (take aways) tawy	Eat	valu	gift				
Other food expenditure / consumption othf							

	Were any [..] ? Yes No	If yes, what was the total value in the past month? (Rand)
Meals Given to Guests	<input type="checkbox"/> Y <input type="checkbox"/> N mlstogue	Mltogval
Meals Received as Guests	<input type="checkbox"/> Y <input type="checkbox"/> N mlsfrogu	Mlfrgval

APPENDIX J: GROUP SUSTAINABLE LIVELIHOODS ANALYSIS POSTERS



Siphamandla 20-10-03

Group Livelihood Analysis Record

Strategies for living

95 group

- community gardening -2
- stokvel (money) R50 monthly
- burial club - R50 monthly -1
- support group - mourning
- stokvel (food) R100 monthly -3

general

- bead work
- mat weaving
- the garden
- the cloaking
- pension -4
- remittances

handwork 5

church meetings, community garden
*Social: group, stokvels, burial clubs
common meeting places (water/firewood collection)

*Natural
rain, water, land, sun, trees (ubud)

*Financial
pension, savings, membership fees,
the stock sell their garden produce.

Resources that we have

Human
stokvel (labour)
knowledge to get money to do things

*Physical
the stock, crops
implements (hoe, bushie)
seeds, meeting point (the)
roads, transport
electricity

Threats to getting what we need

Can change
- pests (applying pesticides)
- laziness
- not contributing membership fees -5

Cannot change
- sunburn (sun burn) to their cabbage -2
- lack of water (dry river) for watering their crop -4
- drought
- illness -3
- death -1

-2 Our dreams for 5 years time
irrigation, market, increased income to start business (demonstrating)
-1 electricity, better roads, piped water to the tractor.
-5 meeting hall, a big farm

15-10-03

VUSWA INDALA

Group Livelihood Analysis Record

Strategies for living 4

- Bead work during weekends
- Mat weaving
- Household gardens
- Selling homemade brew
- Making & selling brooms @ pension stores
- Collecting & selling woods
- Community/home gardens
- Land preparation & someone else then getting paid
- Selling goodies @ schools & sweets, pat-cake
- Sheeping & money
- Remittance, pensions

*Social:

- Church meetings
- Extended families
- Neighbors moral support/counselling

Human

- Language/character (personality traits)
- Indigenous agricultural knowledge
- Labour
- Talent & sharing it

Resources that we have

*Natural

- Wild veges/fruit (unimproved)
- H2O, wind, sun
- Gravel (lo) (hairs) -> wild spinach
- Wood
- Land
- Trees, grass
- Crop manure

*Physical:

- Equipments & land prep
- Land
- Seed, manure, H2O
- Working can
- Transport & seed buying/haunt
- Rats

*Financial

- Pension, grants (child support)
- Remittance

Threats to getting what we need

Can change

- Drought (by watering their plants from some irrigation sprinkler)

Cannot change

- Dams & schools?

Our dreams for 5 years time

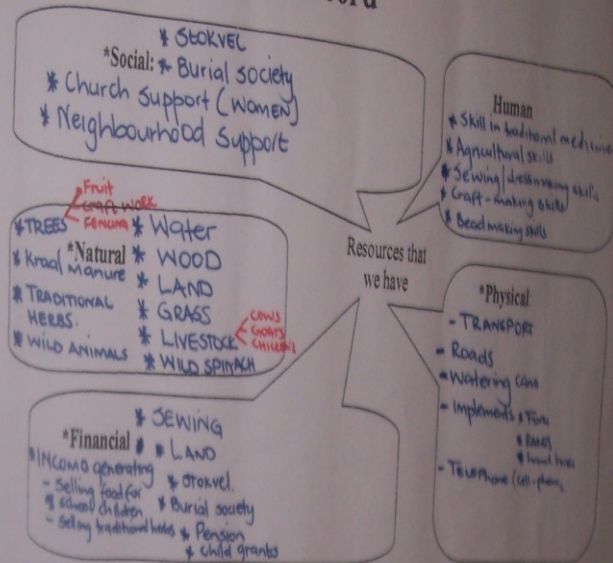
- To take to people
- Good life to life to healthy plants
- Roads (harvest) & transport
- High school, clinics
- Work/employment
- Dams & a bridge
- Electricity
- Water (tap)
- Irrigation equipments

SINAJABULA
20/10/08

Group Livelihood Analysis Record

Strategies for living

- * Community garden.
- * MAT MAKING
- * BEAD MAKING
- * CRAFT WORK
- 2 * Pension
- * Selling goods (matured peanuts)
- 3 * Selling traditional herbs
- 4 * SEWING
- * Work for neighbours 4 money food.
- * LIVESTOCK SELLING
- 5 * STOKVEL (R100-00)
- * Burial Society (R50-00)
- * REMITTANCES.



Threats to getting what we need

- | Can change | Cannot change |
|--------------------------------------|------------------------|
| 1 * Lack of seed | 1 * Drought |
| 2 * Lack of water (watering gardens) | 2 * sickness |
| 3 * Lack of money | 3 * Death |
| 4 * Lack of proper fence | 4 * Weather conditions |

- Our dreams for 5 years time
- 2 * Electricity
 - 1 * Proper tarred roads
 - * Large scale vegetable garden
 - * Market
 - * CEECHIE
 - * Service providers to give advice
 - * Proper working clinic
 - * Proper running water (taps)
 - 4 * NETWORK

Group Livelihood Analysis Record ¹³⁻¹⁰⁻⁰³ SIZATHINA

Strategies for living

- SEWING
- MATS MAKING
- BEAD WORK
- CRAFT (COOKING STICKS) (I)
- SECOND HAND CLOTHING (I)
- STOKVEL
- BURIAL SOCIETY
- CHILD GRANT
- PENSIONS
- REMITTANCE

*Social:
BURIAL SOCIETY, STOKVEL

*Natural WOOD WATER
LAND, WILD SPINACH, GRASS
(THATCH), LIVESTOCK, MANURE (craal)

*Financial SEWING, STOKVEL,
SELLING VEGETABLES,
PENSION, (CHILD GRANTS,
LIVESTOCK (RARE), MANURE (craal)
* CHILDREN

Knowledge
Human OF traditional
medicine, DRESS MAKING
Skill of house building,
Agricultural skills,
LABOUR (Agricultural)

Resources that
we have

*Physical
HAND hoes, boots,
FORKS, WATER CANS,
WHEEL BARRROW, HOUSES,
SICKEL, MANURE (craal)

Threats to getting what we need

Can change

LACK OF MONEY (sell vegetables) 3
LAZINESS
LACK OF SEEDS (SHARE)
LACK OF implements (barrrow) 4
PESTS & INSECTS
LACK OF FENCE

Cannot change

SICKNESS 2
WEATHER 5
DEATH 1
PESTS (Rode)
FLOODS

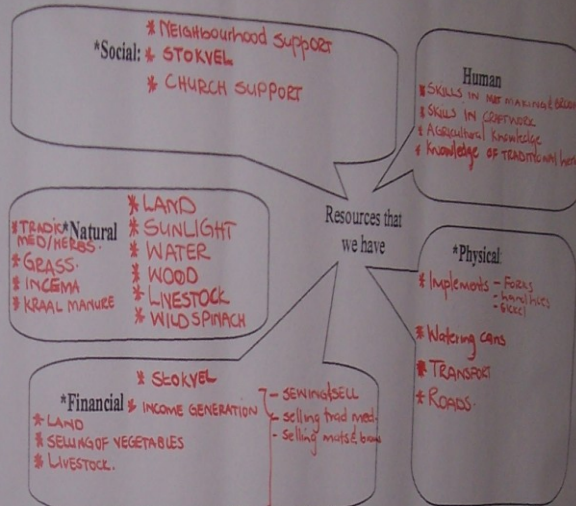
^{3rd} Our dreams for 5 years time
market to sell, very big gardens, irrigation, lots of money, tractor,
Knowledge on pest control, more active members support from govt

14 out of 24 MEMBERS
 28/10/03

Group Livelihood Analysis Record

Strategies for living

- 1 * Community garden
- * Collection of wood & sell
- * MAT MAKING & sell
- * Broom making & sell
- 3 * Collect traditional med & sell
- 5 * SEWING
- * LIVESTOCK USING DAIRY PRODUCTS
- 4 * PENSION
- * CHILD GRANTS
- 2 * STOCKVEL (R50 - R100)
- * REMITTANCES



Threats to getting what we need

- | Can change | Cannot change |
|--|----------------------------|
| 1 * LACK OF FERTILIZERS | 1 * LACK OF MONEY |
| 2 * LACK OF WATER (NEED FOR PIPES) | * DEATH |
| 5 * LACK OF KNOWLEDGE ABOUT PEST CONTROL | * SICKNESS |
| * LACK OF FENCE | 3 * DROUGHT |
| | * Weather conditions (bad) |

- 2 * PROPER ROADS Our dreams for 5 years time
- * SEWING MACHINES
 - 3 * IRRIGATION SYSTEMS
 - * FRESH TAP WATER
 - 5 * ELECTRICITY
 - * PROPER INCREASED IMPLEMENTS
 - 1 * CLINICS
 - * CRECHE
 - * Community Hall
 - * AVAILABLE MARKETS FOR VEGETABLES

THATHANI C.G.G.
Group Livelihood Analysis Record

Strategies for living

farming
mat weaving
bead work
crochet
sells wood
sell traditional medicine
old age pension - R700
stokvels
bural clubs

*Social: respect, neighbour hood
bural clubs, family support
stokvels

Human
skills, experience in
sewing, teaching
(knowledge)

*Natural wood, grass
river, natural
compost, sun, rain, land

Resources that
we have

*Physical
transport, implements
seeds, compost
Kraal manure

*Financial ~~transport~~
membership fees, stokvels, savings
livestock, pensions

Threats to getting what we need

Can change

laziness
soil infertility
~~the~~ fencing their garden

Cannot change

police against
medicine
(illness)
death, weather
illegal selling of traditional

Our dreams for 5 years time

To be successful farmers, market places, food drying equipment
a big farm, poultry farming, fencing

MKANYEZI

21/10/03

Group Livelihood Analysis Record

- LIVESTOCK
- Strategies for living
- Community Gardening 1
- SELL GOODS AT PENSION STATIONS. 3
- BRING AND SHARE 4
- BURIAL SOCIETY (R50-00 A MONTH) 5
- BEAD WORK
- SEWING & SELL
- MAKING DOWELS
- MADUMBE SEED SELLING (INDEGENOUS ROP)
- BROOM MAKING
- MAT MAKING
- STOKVEL (R200-00 MONTH) 4
- REMITTANCE
- PENSION 2
- CHILD GRANTS

COMMUNITY GARDENING,
*Social: BURIAL SOCIETY, BRING & SHARE
STOKVEL, CHURCH MEETINGS, NEIGHBOURHOOD
EXTENDED FAMILY SUPPORT.

SELLING SKILLS, AGRICULTURAL
SKILLS, HUMAN BEAD WORK
SKILLS, CRAFT WORK SKILLS,
KNOWLEDGE OF TRADITIONAL
MEDICINE, SEWING SKILLS.

GRASS, WOOD,
*Natural
WILD SPINACH, WATER, COW DUNG
KRAAL MANURE, LAND, ASH (INSECTICIDE)
Fruit TREES, SUNLIGHT, RAIN
GUM TREES.

Resources that we have

*Physical
LAND, GUM TREES
TRANSPORT
ROADS, CARS,
ELECTRICITY, SOLAR
ELECTRICITY.

SELLING WOOD, SELLING *GOODS,
*Financial
SELLING VEGETABLES, STOKVEL,
BUILDING HOUSES FOR OTHERS, SAVINGS ACCOUNT
(R10-00), PENSION, CHILD GRANT, LAND
TREES (GUM TREES)

Threats to getting what we need

Can change
LACK OF MONEY (eg buy seed) 1
LACK OF IMPLEMENTS 3
LACK OF WATER 2
LAZINESS 4

Cannot change
SICKNESS 1
WEATHER 4
DEATH 2
SUNLIGHT 4
DROUGHT 3
LAZINESS 5

Two way

PROPER FENCING, IRRIGATION SYSTEM, HAND HOES, GARDEN BOOTS
ELECTRICITY INSTALLATION, MARKET, PROPER TARED ROADS

Our dreams for 5 years time

BHEKOKUHLLE

22/04/2003 Group Livelihood Analysis Record

INDIV + *

Strategies for living

- SELLING OF GOODS (Individually)
 - * ICE CREAM
 - * SAND WITCHES
 - * JUICE
- Community GARDENING 3
- MAT MAKING
- MAKING BROOMS 5
- LIVESTOCK + SELL 1
- BEAD WORK 4
- PENSION 2
- CHICKENS eaten
- CHILD GRANTS 2
- REMITTANCES
- STOKVEL < FOR FOOD (Rm) FOR MONEY
- BURIAL SOCIETY
 - GIVE R10 & BUY FOOD FOR COOKING

*Social:

- *Stokvel
- *Bural society
- *Church collection through praying & offerings
- *Extended family

Human

- *Indigenous knowledge
- *Agricultural skills
- *Not being lazy (e.g. drinking alcohol)
- *Agricultural health advisors
- *Traditional healers

Resources that we have

- *Wood collection
- *Natural
 - *Wild spinach
 - *Soil (Land)
 - *Water/rain
- *TRADITIONAL HERBS
 - *KRAAL MATURES
 - *COW DUNG (FOR FERTILISER)
 - *Sunlight
 - *Ashes

*Financial

- *Pension
- *Pension, child grants
- *Stokvels (contribution fees)
- *Increase from sales

Livestock

*Physical:

- *Trees (poles & fencing)
- *Instruments (sickles, picks etc)
- *Shoes (boots)
- *Cars for watering plants
- *Transport
- *Records
- *Seeds

Threats to getting what we need

Can change

- *Laziness
- *Lack / shortage of money

Cannot change

- *Drought
- *Sicknesses
- *Travelling
- *Heavy rains

Our dreams for 5 years time

- *Irrigation schemes, fencing
- *Fencing
- *Instruments for ploughing
- *Shoes
- *Records
- *Transport
- *Electricity
- *Drinking water from taps (boreholes not too far)

APPENDIX K: SOME OF THE SPSS DATA OUTPUTS

Income category versus care for the sick Crosstabulation, Maphephetheni uplands, 2003 (n = 598)

Count

		Caring for the sick in 2003		Total Number
		No	Yes	
Income category in 2003	No income	278	176	454
	<160	48	5	53
	161-699	31	4	35
	over 700	39	17	56
Total		396	202	598

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	27.201(a)	3	.000
Likelihood Ratio	31.899	3	.000
Linear-by-Linear Association	9.453	1	.002
N of Valid Cases	598		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 11.82.

Income category versus caring for the sick Crosstabulation, Maphephetheni uplands, 2004 (n = 441)

Count

		Caring for the sick in 2004		Total Number
		No	Yes	
Income category in 2004	No income	194	86	280
	<160	8	11	19
	161-699	58	26	84
	over 700	23	35	58
Total		283	158	441

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.240(a)	3	.000
Likelihood Ratio	22.316	3	.000
Linear-by-Linear Association	11.155	1	.001
N of Valid Cases	441		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.81.

Selling agricultural produce versus caring for the sick Crosstabulation, Maphephetheni uplands, 2003 (n = 598)

Count

		Caring for the sick in 2003		Total no
		No	Yes	
Selling agricultural produce in 2003	No	366	90	456
	Yes	30	112	142
Total		396	202	598

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	169.285(b)	1	.000		
Continuity Correction(a)	166.651	1	.000		
Likelihood Ratio	165.455	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	169.002	1	.000		
N of Valid Cases	598				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 47.97.

Selling agricultural produce versus caring for the sick Crosstabulation, Maphephetheni, 2004 (n = 441)

Count

		Caring for the sick in 2004		Total no
		No	Yes	
Selling agricultural produce in 2004	No	275	96	371
	Yes	8	62	70
Total		283	158	441

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	100.679(b)	1	.000		
Continuity Correction(a)	97.970	1	.000		
Likelihood Ratio	101.438	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	100.451	1	.000		
N of Valid Cases	441				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 25.08.

Grants category versus cost of illness category Crosstabulation, Maphephetheni, 2003 (n = 598)

Count

		Cost of illness category in 2003				Total No income
		No income	< 160	161-699	over 700	
Grants category in 2003	No income	399	32	21	2	454
	< 160	46	5	2	0	53
	161-699	30	3	2	0	35
	over 700	39	6	8	3	56
Total		514	46	33	5	598

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	27.115(a)	9	.001
Likelihood Ratio	18.134	9	.034
Linear-by-Linear Association	16.108	1	.000
N of Valid Cases			
598			

a. 10 cells (62.5%) have expected count less than 5. The minimum expected count is .29.

Cost of illness category versus grants category Crosstabulation, Maphephetheni, 2004 (n = 632)

Count

		Grants category in 2004				Total No income
		No income	< 160	161-699	over 700	
Cost of illness category in 2004	No income	397	8	56	24	485
	< 160	28	0	10	2	40
	161-699	33	0	25	24	82
	over 700	13	0	4	8	25
Total		471	8	95	58	632

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	100.743(a)	9	.000
Likelihood Ratio	85.260	9	.000
Linear-by-Linear Association	79.128	1	.000
N of Valid Cases			
632			

a. 6 cells (37.5%) have expected count less than 5. The minimum expected count is .32.

Income category versus health Crosstabulation, Maphephetheni, 2003 (n = 596)

Count

		Health status in 2003					Total
		very good	Good	fair	Poor	very poor/sick	
Income category in 2003	No income	167	156	47	68	14	452
	<160	27	17	1	8	0	53
	161-699	15	11	4	5	0	35
	over 700	8	7	10	27	4	56
	Total	217	191	62	108	18	596

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	62.017(a)	12	.000
Likelihood Ratio	60.443	12	.000
Linear-by-Linear Association	23.258	1	.000
N of Valid Cases			
596			

a. 4 cells (20.0%) have expected count less than 5. The minimum expected count is 1.06.

Income category versus health Crosstabulation, Maphephetheni, 2004 (n = 441)

Count

		Health status in 2004					Total
		very good	good	fair	poor	very poor/sick	
Income category in 2004	No income	143	57	35	30	15	280
	< 160	7	7	3	1	1	19
	161-699	31	17	12	18	6	84
	over 700	12	9	13	14	10	58
	Total	193	90	63	63	32	441

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	38.107(a)	12	.000
Likelihood Ratio	36.334	12	.000
Linear-by-Linear Association	29.049	1	.000
N of Valid Cases			
441			

a. 5 cells (25.0%) have expected count less than 5. The minimum expected count is 1.38.

Caring for the sick versus household chores Crosstabulation, Maphephetheni, 2003 (n = 598)

Count

		Household chores in 2003		Total
		No	Yes	No
Caring for the sick in 2003	No	253	143	396
	Yes	3	199	202
Total		256	342	598

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	212.766(b)	1	.000		
Continuity Correction(a)	210.225	1	.000		
Likelihood Ratio	267.369	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	212.411	1	.000		
N of Valid Cases	598				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 86.47.

Caring for the sick versus household chores Crosstabulation, Maphephetheni, 2004 (n = 441)

Count

		Household chore in 2004		Total
		No	Yes	No
Caring for the sick in 2004	No	173	110	283
	Yes	0	158	158
Total		173	268	441

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	158.935(b)	1	.000		
Continuity Correction(a)	156.381	1	.000		
Likelihood Ratio	212.551	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	158.575	1	.000		
N of Valid Cases	441				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 61.98.

Gender versus health status Crosstabulation, Maphephetheni, 2003 (n = 596)

Count

		Health status in 2003					Total
		very good	good	fair	poor	very poor/sick	
Gender status in 2003	Male	122	95	18	43	10	288
	Female	95	96	44	65	8	308
Total		217	191	62	108	18	596

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.321(a)	4	.001
Likelihood Ratio	18.685	4	.001
Linear-by-Linear Association	8.920	1	.003
N of Valid Cases	596		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.70.

Gender versus health status Crosstabulation, Maphephetheni, 2004 (n = 441)

Count

		Health status in 2004					Total very good
		very good	Good	fair	poor	very poor/sick	
Gender status in 2004	Male	100	46	21	22	13	202
	Female	93	44	42	41	19	239
Total		193	90	63	63	32	441

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.128(a)	4	.025
Likelihood Ratio	11.278	4	.024
Linear-by-Linear Association	7.527	1	.006
N of Valid Cases	441		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 14.66.

Age category versus health status Crosstabulation, Maphephetheni, 2003 (n = 356)

Count

		Health status in 2003					Total
		very good	good	Fair	poor	very poor/sick	
Age category in 2003	1-15 years	32	77	3	17	0	129
	16-24 years	30	45	2	9	4	90
	25-39 years	10	35	7	6	1	59
	40-55 years	3	18	11	16	2	50
	Over 55 years	1	6	3	15	3	28
Total		76	181	26	63	10	356

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	94.968(a)	16	.000
Likelihood Ratio	90.812	16	.000
Linear-by-Linear Association	50.440	1	.000
N of Valid Cases			
356			

a 9 cells (36.0%) have expected count less than 5. The minimum expected count is .79.

Age category versus health status Crosstabulation, Maphephetheni, 2004 (n = 401)

Count

		Health status in 2004					Total
		very good	good	Fair	poor	very poor/sick	
Age category in 2004	<1 year	1	0	0	0	0	1
	1-15 years	81	37	13	21	6	158
	16-24 years	46	19	9	12	6	92
	25-39 years	31	12	12	9	3	67
	40-55 years	11	8	12	13	5	49
	Over 55 years	5	8	6	7	8	34
Total		175	84	52	62	28	401

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	50.051(a)	20	.000
Likelihood Ratio	47.530	20	.000
Linear-by-Linear Association	30.955	1	.000
N of Valid Cases			
401			

a 9 cells (30.0%) have expected count less than 5. The minimum expected count is .07

Correlations

		Income category in 2003	Age in 2003
Income category in 2003	Pearson Correlation	1	.381(**)
	Sig. (2-tailed)		.000
	N	633	561
Age in 2003	Pearson Correlation	.381(**)	1
	Sig. (2-tailed)	.000	
	N	561	561

** Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Age category in 2003	Income category in 2003
Age category in 2003	Pearson Correlation	1	.459(**)
	Sig. (2-tailed)		.000
	N	357	357
Income category in 2003	Pearson Correlation	.459(**)	1
	Sig. (2-tailed)	.000	
	N	357	598

** Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Age category in 2004	Income category in 2004
Age category in 2004	Pearson Correlation	1	.370(**)
	Sig. (2-tailed)		.000
	N	561	561
Income category in 2004	Pearson Correlation	.370(**)	1
	Sig. (2-tailed)	.000	
	N	561	633

** Correlation is significant at the 0.01 level (2-tailed).

Income category * Consume seed stock held for next season Crosstabulation

Count

		Consume seed stock held for next season					Total
		Never	Hardly at all	Once in a while	Pretty often	All the time/everyday	Never
Income category	No income	1	0	0	8	3	12
	< 160	0	1	0	2	1	4
	161-699	1	1	2	10	1	15
	over 700	13	1	4	11	1	30
Total		15	3	6	31	6	61

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22.469(a)	12	.033
Likelihood Ratio	23.735	12	.022
Linear-by-Linear Association	12.023	1	.001

N of Valid Cases 61

a. 16 cells (80.0%) have expected count less than 5. The minimum expected count is .20.

Consume seed stock held for next season * Less preferred and less expensive foods Crosstabulation

Count

		Less preferred and less expensive foods					Total
		Never	Hardly at all	Once in a while	Pretty often	All the time/everyday	Never
Consume seed stock held for next season	Never	3	2	8	2	0	15
	Hardly at all	1	0	1	1	0	3
	Once in a while	0	0	3	3	0	6
	Pretty often	1	3	7	17	3	31
	All the time/everyday	0	0	1	3	2	6
Total		5	5	20	26	5	61

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.503(a)	16	.101
Likelihood Ratio	24.961	16	.071
Linear-by-Linear Association	14.651	1	.000
N of Valid Cases	61		

a. 22 cells (88.0%) have expected count less than 5. The minimum expected count is .25.

Income category * Borrow food, or rely on help from a friend or relative Crosstabulation

Count

		Borrow food, or rely on help from a friend or relative					Total
		Never	Hardly at all	Once in a while	Pretty often	All the time/everyday	Never
Income category	No income	2	1	2	6	1	12
	< 160	1	0	0	2	1	4
	161-699	1	2	4	7	1	15
	over 700	6	2	16	6	0	30
Total		10	5	22	21	3	61

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.451(a)	12	.171
Likelihood Ratio	18.294	12	.107
Linear-by-Linear Association	5.676	1	.017
N of Valid Cases	61		

a. 16 cells (80.0%) have expected count less than 5. The minimum expected count is .20.

Skip entire days without eating * Borrow food, or rely on help from a friend or relative Crosstabulation

Count

		Borrow food, or rely on help from a friend or relative					Total
		Never	Hardly at all	Once in a while	Pretty often	All the time/everyday	Never
Skip entire days without eating	Never	10	5	19	16	1	51
	Hardly at all	0	0	2	2	0	4
	Once in a while	0	0	1	2	1	4
	Pretty often	0	0	0	1	1	2
Total		10	5	22	21	3	61

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.525(a)	12	.131
Likelihood Ratio	13.989	12	.301
Linear-by-Linear Association	9.244	1	.002
N of Valid Cases	61		

a. 17 cells (85.0%) have expected count less than 5. The minimum expected count is .10.

Income category * Limit portion size at meal times Crosstabulation

Count

		Limit portion size at meal times					Total
		Never	Hardly at all	Once in a while	Pretty often	All the time/everyday	Never
Income category	No income	0	1	2	7	2	12
	< 160	2	0	2	0	0	4
	161-699	3	1	4	7	0	15
	over 700	10	4	9	7	0	30
Total		15	6	17	21	2	61

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.571(a)	12	.057
Likelihood Ratio	22.963	12	.028
Linear-by-Linear Association	9.813	1	.002
N of Valid Cases	61		

a. 16 cells (80.0%) have expected count less than 5. The minimum expected count is .13.

Buy food on credit * Beg from neighbours or friends Crosstabulation

Count

		Beg from neighbours or friends				Total
		Never	Hardly at all	Once in a while	Pretty often	Never
Buy food on credit	Never	17	14	7	2	40
	Hardly at all	1	0	0	0	1
	Once in a while	0	2	2	0	4
	Pretty often	1	2	6	1	10
	All the time/everyday	1	2	2	1	6
Total		20	20	17	4	61

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.033(a)	12	.240
Likelihood Ratio	16.297	12	.178
Linear-by-Linear Association	5.087	1	.024
N of Valid Cases	61		

a. 17 cells (85.0%) have expected count less than 5. The minimum expected count is .07.

Limit portion size at meal times * Less preferred and less expensive foods Crosstabulation

Count

		Less preferred and less expensive foods					Total
		Never	Hardly at all	Once in a while	Pretty often	All the time/everyday	Never
Limit portion size at meal times	Never	2	2	7	4	0	15
	Hardly at all	1	0	4	1	0	6
	Once in a while	1	1	5	7	3	17
	Pretty often	1	2	4	13	1	21
	All the time/everyday	0	0	0	1	1	2
Total		5	5	20	26	5	61

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.636(a)	16	.237
Likelihood Ratio	19.728	16	.233
Linear-by-Linear Association	7.068	1	.008
N of Valid Cases	61		

a. 20 cells (80.0%) have expected count less than 5. The minimum expected count is .16.