

IMPACT OF AGRICULTURAL POLICY CHANGES ON HOUSEHOLD FOOD SECURITY AMONG SMALL-SCALE FARMERS IN SOUTHERN ZAMBIA

PROGRESS HANZWIDA NYANGA

NORWEGIAN UNIVERSITY OF LIFE SCIENCES
DEPARTMENT OF INTERNATIONAL ENVIRONMENT AND DEVELOPMENT STUDIES (NORAGRIC)
MASTER THESIS 30 CREDITS 2006



**IMPACT OF AGRICULTURAL POLICY CHANGES
ON
HOUSEHOLD FOOD SECURITY AMONG SMALL-SCALE FARMERS
IN
SOUTHERN ZAMBIA**

Master Thesis

By

Progress Hanzwida Nyanga

May 2006

The Department of International Environment and Development Studies, Noragric, is the international gateway for the Norwegian University of Life Sciences (UMB). Eight departments, associated research institutions and the Norwegian College of Veterinary Medicine in Oslo. Established in 1986, Noragric's contribution to international development lies in the interface between research, education (Bachelor, Master and PhD programmes) and assignments.

The Noragric Master theses are the final theses submitted by students in order to fulfil the requirements under the Noragric Master programme "Management of Natural Resources and Sustainable Agriculture" (MNRSA), "Development Studies" and other Master programmes.

The findings in this thesis do not necessarily reflect the views of Noragric. Extracts from this publication may only be reproduced after prior consultation with the author and on condition that the source is indicated. For rights of reproduction or translation contact Noragric.


© Progress Hanzwida Nyanga, May 2006
pnyanga@yahoo.co.uk

Noragric
Department of International Environment and Development Studies
P.O. Box 5003
N-1432 Ås
Norway
Tel.: +47 64 96 52 00
Fax: +47 64 96 52 01
Internet: <http://www.umb.no/noragric>

Declaration

I, Progress Hanzwida Nyanga, do hereby declare to the senate of the Norwegian University of Life Sciences (UMB) that this thesis is a product of my own original research work, and it has not been submitted to any other university than the Norwegian University of Life Sciences for any academic degree. Materials and information other than my own are properly acknowledged.

Signature


.....

Place

As
.....

Date

15th May 2006
.....



Abstract

Zambia faces a challenge of developing policies that will increase agricultural production, reduce poverty and promote economic growth. During the past 25 years, Zambia's agricultural policies have undergone major changes from an extreme state controlled and monopolistic system to the other extreme of market liberalization. Despite these policy changes, 80% of the national population (11 million) is threatened with food insecurity and 47% of the national population is undernourished (FAO 2006b, GRZ 2004b, Saasa 2003). In terms of poverty, 64% of the population is living below the income poverty line (US \$1 per day) and incidence of poverty in rural areas is as high as 74% (UNDP 2005, GRZ 2004b).

This thesis assesses the impact of agricultural policy changes on household food security in Southern Zambia. The aim of the study was to link the policy changes at a macro level to the experiences of small-scale farmers at a micro-level. A statist agricultural development model and a market-led agricultural development model were used as theoretical background. A conceptual framework of food security was used to analyze the results.

Using participatory research methods with small-scale farmers, it was found that the household food security status has generally deteriorated since the adoption and implementation of liberal policies after 1991. In average, the agricultural production has declined as well as household income levels. Farmers perceive liberal policies as being inappropriate because of the loss of access to stable maize markets, reduction in access to credit, inputs and reduction in government extension support for both livestock and crops.

Three effects of agricultural policy changes on household food security in relation to gender were identified. Firstly, previously women dominated activities such as growing groundnuts are becoming popular among men. Secondly, men are shifting towards cotton production while women are shifting towards small livestock production especially pigs. Thirdly, men have generally reduced their support towards meeting household food requirements while women have increased their involvement in household food provision.

Acknowledgements

Working with this thesis has been an interesting and challenging experience. Several people and organizations have contributed to the fulfillment of my thesis.

First of all, I would like to convey my heartfelt gratitude to my main supervisor, Professor Ruth Haug. I thank you for your constant motivation, comments and challenge you gave me from the moment you gladly accepted to supervise me to the moment of my defence. I would like also express my special thanks to my local supervisor, Dr. T. Kalinda for his relentless support during my field work. My sincere thanks for your comments on my methodology and for successfully initiating me into field work.

Special thanks go to farmers in Manyepa village for providing me with the most valuable information without which this thesis could not have been done. Thank you very much for sharing your experiences and information. I also thank all the organizations, too numerous to be listed, that provided me with information during my field work.

I give earnest appreciation to my parents, my brothers (Gift, Brighton and McGiven), and the rest of my family members for their moral support during my data collection and writing period. My heartfelt appreciation goes also to my dear friends Getrude, Tone and Anupam for sparing their time to comment on my work.

Lastly but not the least I thank my beloved fiancée Precious for searching and sending me additional literature during my data analysis. Most important, I would like to thank you for being patient and supportive during my research and studies.

Table of Contents

Abstract	iii
Acknowledgements	iv
Table of Contents	v
List of Figures	vii
List of Tables.....	vii
List of Photos	vii
List of Boxes	vii
Abbreviations and Acronyms.....	viii
1. INTRODUCTION.....	1
1.1 Statement of the problem	3
1.2 Objective and Research Questions.....	5
1.3 Rationale.....	5
2. LITERATURE REVIEW.....	6
2.1 Food security concept.....	6
2.2 Gender and Food Security.....	7
2.3. Conceptual Framework of Food Security	8
2.3.1 Food Availability.....	8
2.3.2 Food Access.....	9
2.3.3 Food Utilization	10
2.4 Agricultural development models	11
2.4.1 State controlled agricultural development model	11
2.4.2 Market-led agricultural development model.....	12
2.5 Development of Agriculture in Zambia	13
2.5.1 Changes in Agricultural Policy.....	13
2.5.2 Phase of State Control (Pre-SAP Phase) 1980-1990.....	13
2.5.2.1 Marketing and Pricing Policy.....	14
2.5.2.2 Credit and Input Policy	15
2.5.2.3 Extension Policy: Training and visit	15
2.5.3 Structural Adjustment Program (SAP) phase 1991-2000	16
2.5.3.1 Credit and Input Policy	17
2.5.3.2 Marketing and Pricing Policy.....	18
2.5.3.3 Extension Policy: Demand-driven extension approach	19
2.5.4 Phase of Poverty Reduction Strategy Paper (2002-2005)	20
2.5.4.1 Marketing and Pricing Policy.....	20
2.5.4.2 Extension Policy: Participatory Extension Approaches.....	21
3. RESEARCH METHODS.....	21
3.1 Selection of the study area	22
3.2 Selection of Informants	22
3.3 Wealth and Well-being Ranking.....	23
3.4 Primary Data Collection.....	25
3.5. Local perception and indicators of household food security.....	27
3.6 Secondary Sources of Data	27
3.7 Data Analysis	28
3.7.1 Analytical framework for impact of agricultural policy changes on household food security	30
3.7.2 Shocks.....	31

3.7.3	<i>Coping capacity</i>	31
3.7.4	<i>Key outcomes</i>	32
3.8	Validity and reliability	32
3.9	Ethical considerations	34
3.9.1	<i>Limitations</i>	36
4.	STUDY AREA.....	38
4.1	Country context.....	38
4.1.1	<i>Description of the study site</i>	39
5.	FINDINGS AND DISCUSSION	42
5.1	Wealth and well-being ranking	42
5.2	Trends in Marketing and Pricing Policy	46
5.3	Credit and Input Policy	49
5.4	Extension Policy.....	50
5.5	Causes of Food Insecurity	51
5.5.1	<i>Drought: An agricultural policy related shock</i>	53
5.5.2	<i>Shocks in Extension Policy and Livestock Morbidity</i>	55
5.5.3	<i>Health and shocks in Marketing and Pricing policy</i>	57
5.5.4	<i>Shocks in Credit and Input supply policy</i>	58
5.6	Effect of policy changes on household agricultural production.....	60
5.6.1	<i>Crop production trends in average</i>	60
5.6.2	<i>Livestock production trends</i>	61
5.7	Coping strategies and capacity.....	62
5.7.1	<i>Changes in household agriculture orientation</i>	62
5.7.1.1	<i>Changes in major purpose for growing crops</i>	64
5.7.1.2	<i>Changes in major purposes for raising livestock</i>	66
5.7.2	<i>Changes in household Income profile</i>	67
5.8	Key outcomes.....	71
5.8.1	<i>Local meaning of household food security</i>	71
5.8.2	<i>Trend in Household food security</i>	72
6.	CONCLUSION	76
7.	REFERENCES.....	85

List of Figures

Figure 1	Conceptual Framework of food security.....	8
Figure 2	Analytical framework for assessing impact of agricultural policy changes on household food security.....	30
Figure 3	Map of Zambia, Agro-ecological Regions and Study Area.....	41
Figure 4	Proportions of households in each poverty level	42
Figure 5	Profile of Gender-poverty levels.....	43
Figure 6	Flow chart for causes of household food insecurity as perceived by farmers.....	52
Figure 7	Historical Matrix for crop production.....	60
Figure 8	Historic matrix for livestock production.....	61
Figure 9	Historic matrix for household income.....	69
Figure 10	Historic matrix for household food security showing extent of changes in food security indicators.....	73

List of Tables

Table 1	Indicators of Poverty and Poverty levels.....	44
Table 2	Changes in the main purpose for growing crops and raising livestock.....	63
Table 3	Gender perceptions of food security.....	71

List of Photos

Photo 1	Mr. Macha a 79 years old man explaining to the researcher his experience with agricultural policy changes.....	47
Photo 2:	Trends in water availability.....	53
Photo: 3	Showing a female domain non-farm income activity: An informant making a traditional basket while being interviewed	68
Photo: 4	Showing a male domain non-farm income activity: a family of black smiths at work.	68
Photo 5	General trends in household food security as perceived by farmers.....	75

List of Boxes

Box 1:	Perception of a farmer towards agricultural policy changes in Zambia.....	45
Box 2:	Deteriorating maize marketing environment.....	48
Box 3:	A small-scale farmer describing cattle morbidity and food security.....	56
Box 4:	Farmer' experience with potholing.....	57
Box 5:	Perceptions of a farmer towards agricultural input support for poverty reduction.....	59

Abbreviations and Acronyms

ACMP	Agricultural Credit Management Program
ACP	Agricultural Commercialization Program
AIRF	Agricultural Input Revolving Fund,
ASIP	Agriculture Sector Investment Program
CSO	Central Statistics Office
CUSA	Credit Union and Savings Association
FAO	Food and Agriculture Organization
FRA	Food Reserve Agency
FSLF	Fertilizer Support Loan Facility
GRZ	Government Republic of Zambia
GTZ	Germany Agency for Technical Cooperation
IFAD	International Fund for Agricultural Development
IMF	International Monetary Fund
MACO	Ministry of Agriculture and Cooperatives
MMD	Movement for Multi-Party Democracy
NAMBoard	National Agricultural Marketing Board
NAP	National Agricultural Policy
PAM	Program Against Malnutrition
PEA	Participatory Extension Approaches
PRSP	Poverty Reduction Strategy Paper
SAP	Structural Adjustment Program
T & V	Training and Visit
UNDP	United Nations Development Program
UNIP	United National Independence Party
VAC	Vulnerability Assessment Committee
ZCF-FS	Zambia Cooperative Federation-Finance Services

1. INTRODUCTION

During the last 25 years, farmers in Zambia have experienced major shifts in agricultural policies¹ from a statist² agricultural development system to the other extreme of liberalized and market-led agricultural development system. The Zambian government has implemented a series of economic reforms during the past two and half decades that entail a reduction of the state's role in economic activities and ensuring that the private sector plays a leading role. In all the policy changes undertaken in Zambia since 1980, agriculture has been identified as playing a key role for achieving self sufficiency in food and as an engine for economic growth (GRZ 2004a, Wood 1990). The country has a great potential for agricultural development yet food insecurity³ is increasingly becoming prevalent and a national disaster (FAO 2005, IFRC 2005, GRZ 2004b, FAO 2002). In terms of food deprivation⁴, the number of people undernourished⁵ has increased from 1.7 million during the period 1979-1980 to 4.0 million during 1990-1992 and has kept rising to 5.1 million during 2001-2003 out of a population of about 11 million (FAO 2006b). The continued decline in agricultural production has led to 80% of the Zambian population being threatened with food insecurity (FAO 2005).

From 1964 to mid 1980s the political ideology of President Kaunda, Humanism philosophy, influenced the agricultural development in Zambia. During this period development of agriculture was undertaken by state owned and controlled agencies. The state was fixing prices, heavily subsidized the process of agricultural production and marketing and had monopolized supply of inputs and marketing (Wood 1990). The policy objectives behind such kind of an agricultural development system was to achieve food self-sufficiency, equitable distribution of wealth (reduce social-economic differentiation and inequalities between the rural areas and urban) as well as secure political support from electorates (Wold et al. 1996, Wood 1990). As a result, government subsidies through its parastatal institutions such as National Marketing Board

¹ Policy in this context refers to a defined way of action taken by the government to guide the operations of various actors in agriculture (Singh 1999).

² This is a policy environment with concentration of economic controls and planning in the hands of a highly centralized government.

³ Food insecurity implies lack of physical and economic access, at all times, to sufficient, safe and nutritious food to meet dietary needs and food preferences for an active and healthy life (InterAcademy Council 2004:10).

⁴ Food deprivation refers to lack of physical and economic access to food resulting into undernourishment (Maxwell and Frankenberger 1982, Sen 1981).

⁵ Undernourishment refers to the condition of people whose dietary energy consumption is continuously below a minimum dietary energy requirement for maintaining a healthy life and carrying out a light physical activity (FAO 2006b).

(NAMBoard) and cooperatives enabled agricultural input supply and marketing infrastructure to be easily accessed by rural communities (Wold et al. 1996). However, the continued declining copper prices upon which the economy was depending and increase in oil prices made it increasingly difficult for the government to sustain the subsidies (Wood 1990). Like many other developing countries, the government of Zambia was pressurized by the International Monetary Fund (IMF) and World Bank to adopt structural adjustment economic policies in the mid 1980s, in an attempt to address the economic crisis. Consequently, economic development packages, Structural Adjustment Programs (SAP) driven by multilateral financial institutions IMF and World Bank fostered changes in Zambia's agricultural policies (Wold et al. 1996). Hence, the period from the mid 80s to late 80s was characterized by gradual and incomplete removal of subsidies and state withdrawal from active involvement in the agricultural sector. This phase of policy reforms was often marked by a number of attempts to adopt structural adjustment policies that were abandoned after a short period because of the need to secure political support for President Kaunda's United National Independence Party (UNIP) government (Saasa 2003, Wood 1990).

The wave of democratization that swept across the African continent as well as Eastern Europe gave an impetus for Zambia to move towards multi-party democracy (Wold et al. 1996). After the 1991 general elections, President Kaunda's UNIP government lost and allowed President Chiluba's Movement for Multi-party Democracy (MMD) government to move into office. The new government, MMD, embarked on a full-fledged implementation of IMF and World Bank driven liberal policies. The current government under President Mwanawasa took office in 2001 and has continued following liberal policies and market-led model of agricultural development based on its Poverty Reduction Strategy Papers (PRSP) and Millennium Development Goals (GRZ 2004b).

The Zambian government in its poverty reduction strategy program recognizes the great potential for agricultural development and the key role of agriculture in addressing the millennium development goals and poverty reduction (GRZ 2004b). As a result President Mwanawasa's government has adopted commercialization of agriculture as a means for agricultural

development and poverty reduction especially among small-scale⁶ farmers (GRZ 2004b, GRZ 2001). Commercialization of agriculture implies a transformation of the agriculture system from being a way of life and for subsistence production among small-scale farmers to being a viable business for small-scale farmers (GRZ 2001). The thinking behind this approach is linking small-scale farmers not only to domestic markets but regional and global markets through the adoption of market-led agricultural production (GRZ 2001). Additionally, market-led agricultural development approach assumes that liberalization⁷ of the market would not only enhance competition but also correct distortion and bring efficiency in the market (Cramer et al. 2001, Wold et al. 1996). This is expected to lead to higher prices of farm produce especially those that are usually below the market price (Wold et al. 1996). The high price incentives are expected to foster farmers to increase their production and market more of their produce. This is hoped to increase the small-scale farmers' income, create employment, and reduce food insecurity and poverty (GRZ 2004a, GRZ 2001).

1.1 Statement of the problem

During the past 25 years, the agricultural policies in Zambia have undergone major changes from an extreme state controlled and monopolistic system to the other extreme of market liberalization. The implementation of the IMF and World Bank led liberal policies after 1991 was sudden and rapidly done (Wold et al. 1996). As a result the private sector was not well prepared to take up the roles left by the government as it withdrew from the agricultural sector (Wold et al. 1998, Kokwe 1997). The agricultural policy changes have often come to small-scale farmers as sudden and unexpected events (Kokwe 1997). These sudden policy changes in the agricultural support systems raises questions of credibility of the Zambian agricultural system and equally makes it quite difficult for small-scale farmers to gain trust of new marketing, credit and input supply institutions. Moreover, if policy changes become quite frequent it makes it hard for small-scale farmers to adapt to change and realize the possible benefits of the policy changes. The most important challenge for Zambia is to develop an agricultural policy that will decrease poverty and foster economic growth and social development.

⁶ A small-scale farmer is one who own less than 10 hectares of land and their agriculture is mainly for subsistence (Saasa 2003, MACO et al. 2002).

⁷ Market liberalization refers to policy measures that intend to remove state regulations and price controls affecting the market for agricultural inputs and produce (Kokwe 1997).

Parallel to the agricultural policy changes, the food security in Zambia has kept on deteriorating such that 80% of the national population is threatened with food insecurity. About 47% of the population is undernourished (FAO 2006). In 2003 the 40% of the children below the age of five were chronically malnourished and proportion of under weight children, under the age of five years has increased from 25% in 1991 to 28% in 2002 (GRZ 2004b, Saasa 2003). The percentage of stunted children under the age of five years has equally risen from 40% in 1991 to 47% in 2002 (GRZ 2004b).

The national poverty level is as high as 67% with higher poverty levels in rural areas than urban areas (CSO 2004). Incidence of poverty in rural areas is as high as 74% (CSO 2004). The trend in agricultural productivity index per capita (1999-2001 base period) for most of the years from 1991 to 2005 has been lower than the agricultural productivity index per capita for most of the years during 1980 to 1990 (FAO 2006a). The trend in domestic supply of the staple food (Maize) per capita per year shows a net decrease from a highest value of 159 kilograms in 1981 to a lowest value of 122 kilograms in 2001 over the past 25 years (FAO 2006b). On the contrary, the population has risen from 5.7 million in 1980 to the current population estimated at 11 million (FAO 2006b, UNDP 2005).

The Zambian government in its Poverty Reduction Strategy Paper (PRSP) focuses on agriculture as the engine for economic growth and poverty reduction (GRZ 2004b). The agricultural sector provides employment for about 70% of the labor force and majority of the population derive their income from agriculture (FAO 2005). The problem is that there has been several policy changes aiming at improving agricultural production since 1980 but food security in the country has kept on deteriorating, yet the country has a huge potential for the development of agriculture (FAO 2005, IFRC 2005, GRZ 2004a, FAO 2002). This raises pertinent questions on the impact of agricultural policy changes on household food security among small-scale farmers and on how small-scale farmers perceive the policy changes.

1.2 Objective and Research Questions

The purpose of this study was to link macro agricultural policy changes to the changes in food security at a micro level. The objective of the study was to assess the perceptions of small-scale farmers regarding impact of agricultural policy changes on household food security since 1980 in Southern Zambia. The research questions were:

1. What kind of major policy changes have occurred in the agricultural sector with respect to extension services, maize marketing, credit and input supply?
2. How have these policy changes affected small-scale farmers' agricultural production, income and household food security?
3. What are the effects of agricultural policy changes on household food security in relation to gender?

1.3 Rationale

Food insecurity is a poverty problem that threatens most of the Zambian population (FAO 2005, GRZ 2004b). According to Zambia's Poverty Reduction Strategy Paper (PRSP), development of a market-led agricultural sector has been identified as a cardinal process that would ensure increased household income, food security and poverty reduction (GRZ 2004a). It was imperative to undertake this study so as to provide insight on the gaps that exist between the national macro policy environment and the experiences of small-scale farmers at a micro level.

Majority of the people (65% of the population) in Zambia live in rural areas (CSO 2004). Given that 75% of the farmers are small-scale farmers concentrated in rural areas where incidence of poverty is as high as 74%, perceptions of small-scale farmers are important in the process of agricultural policy formulation and poverty reduction (CSO 2004, UNDP 2005). This study was undertaken in order to provide information on how small-scale farmers perceive the policy changes in relation to food security. The information from this study can be useful for policy makers, agricultural public workers, farmer organizations, non-governmental organizations, bilateral and multi-lateral institutions and the international community concerned with improving agricultural development in Zambia.

Additionally, this study is important in adding knowledge to the existing literature on impact of agricultural policy changes on household food security in Southern Zambia. This study aimed at linking the macro policy changes to the experiences of farmers regarding household food security. A number of macro-studies have been done to assess impact of policies on small-scale farmers but little has been done at a micro level in Zambia (Njobvu 2004, Saasa 2004, MacEwan 2003, Kokwe 1997). Moreover, few of these studies addressed the impact of macro level policy changes on food security at a micro level in Southern Zambia (Njobvu 2004).

2. LITERATURE REVIEW

2.1 Food security concept

The concept of food security has evolved over time. After the 1943 Hot Spring Conference on Food and Agriculture, the concept of food security meant adequate and secure supply of food to everyone (Weingärtner 2005). Food was understood in terms of cereals and a bulk of literature defined the concept of food security from a supply perspective of adequate levels of cereal stocks (Stringer 2001, Reutlinger 1977). However, this kind of thinking was narrow and confined to production as key to meeting food security demands.

Notwithstanding emphasis on production and supply, there was still insufficient food intake by certain communities in the world despite having an overall adequate food supply (Maxwell 1995). Hence, the element of access was included in the meaning of food security (Sen 1981, Maxwell 1995). Elements of nutrition, vulnerability and sustainability equally became integrated in the meaning of food security (Stringer 2001, Maxwell 1995). Maxwell and Frankenberger (1992) summed up food security as a state of secure access to sufficient food at all times for an active health life. Essentially, the food security concept emerged as constituting three fundamental components: availability, access and utilization.

The Rome declaration on World Food defined food security a condition ‘when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (FAO 1996:7).

In the same context, the inability to have physical and economic access to sufficient, safe and nutritious food to meet dietary needs and food preferences at all times for an active and healthy life at all times amounts to food insecurity (FAO 1998, FAO 1996).

2.2 Gender and Food Security

Access to food is not only mediated by physical and economic factors but also by social factors such as gender (Stringer 2001, Quisumbing 1995). Gender is a concept that identifies social relations between men and women (Momsen 2004, Moser, 1993). Gender attributes are culturally and socially constructed, contextually specific and often change in response to circumstances (Moser, 1989). Hence, gender refers to different roles and social relationships between men and women (Momsen 2004).

The gender roles which define what each set, men or women, should do in society closely relates to various social, economic, political and environmental institutions in society (Quisumbing 1995). Social relations between men and women are coupled with power distribution that mediates food security and access to and control over resources such as labor, land, draught power and agricultural credit (Stringer 2001, Moser 1989, Momsen 2004). Women are key players in ensuring household food security (Quisumbing 1995). Though men and women may have complementary roles, in crop production, livestock rearing and fishing, the investment in terms of labor and time to the roles differ (Agrawal 1992).

A study in Sub-Saharan Africa showed that men are often responsible for land clearing, burning and ploughing, while women are engaged in more time consuming weeding, transplanting, post-harvest work and, in some areas, land preparation, and both take part in seeding and harvesting (FAO 2006c). Furthermore, the cultural and social association of cash crops and large livestock to men's control while subsistence food crops and small livestock as being in women's domain illustrates how food security as a gendered concept (Stringer 2001).

2.3. Conceptual Framework of Food Security

The Rome World Food Summit defined food security as a state when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (FAO 2005, FAO 1996). Maxwell and Frankenberger (1992: 8) summarized food security as “secure access at all times to sufficient food for a healthy life.” The concept of Food security is based on three distinct yet inter-related fundamental concepts: food availability, food access and food utilization (Sen 1981, Maxwell 1995). These concepts together determine the food security status at any level of analysis. However, there are several factors that mediate the process of attaining food availability, food access and food utilization in an attempt to achieve food security as shown in Figure 1

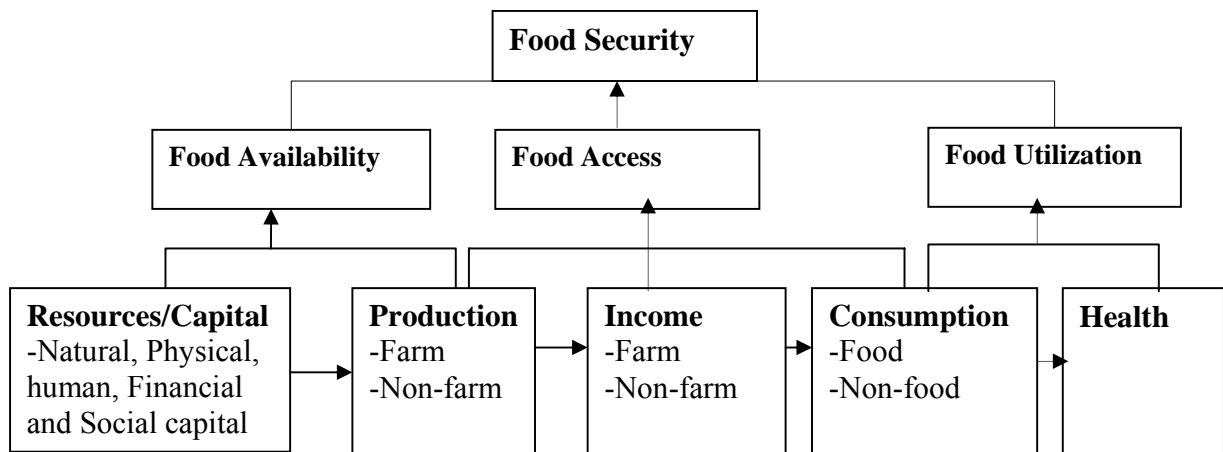


Figure 1: Conceptual framework of food security.

Source: Based on Webb et al. (2002:14).

2.3.1 Food Availability

Food availability in this case relates to physical existence of sufficient food either in fields, stocks or in domestic markets (InterAcademy Council 2004). Mediating factors for food availability are grouped into resources and production. Resources include natural capital, physical capital, and human capital. To this list of resources, also regarded as assets, Ellis (2000) adds financial capital and social capital (Coleman 1990, Putnam et al. 1993).

Natural capital includes rainfall, soil quality, land and forests while physical capital includes livestock, farm implements, buildings, storage facilities and roads. With regards to human capital, variables such as level of education, household size, and gender dimensions, age of household members and health status of household members are central. Ellis (2000) reasons that financial capital refers to savings, loans and credits whilst social capital take account of social relations and networks such as co-operatives and farmer associations. These resources or assets form the bases and means for attaining household food security. Interactions of various resources determine the household production capacity that contributes to food availability. Physical availability of food underscores the significance of production in order to supply enough food for all people at all times. The production component encompasses farm production and non-farm production. Farm production is noted by generic indicators such as area cultivated, crop yield, crop diversity, number of cropping seasons and access to and use of inputs (Webb et al. 2002). Similarly, non-agricultural enterprises such as retail shops, building and basket making constitute the non-farm production entity. The contribution of household production to food security is based on two assumptions. First, it is assumed that an increase in agricultural production would increase the physical availability of food from own household production as well as increase physical availability of food in markets at affordable prices for the poor (DFID 2004). Secondly, increased agricultural production would provide jobs and increase household income to enhance economic access to food (DFID 2004).

2.3.2 Food Access

Access to food is looked at in the dimensions of economic access and social access. The rural growth linkages model⁸ attempts to explain the connection between, two major determining factors of economic access to food, production and income components. Concerning production, the rural growth linkages suggests a symbiotic relationship between farm production and non-farm production where an increase in farm production leads to an increase in non-farm enterprises that in turn enhance investments in farm production. However, Ellis (2002) further discusses that increase in non-farm enterprises may not necessarily arise from an increased farm

⁸ This is an approach to rural development that emphasizes on agricultural growth as a starting point that would give an impetus for growth of rural no-farm income generation (Mellor 1983, Ellis 2002).

production but due to responses and coping strategies arising from shocks, distress and impoverishment (Vaidyanathan 1986 in Ellis). Notwithstanding the debate on rural growth linkages model, the strength of the conceptual framework in Figure 1 is its ability to emphasize on income from both farm production and non-farm enterprises as an indispensable factor in determining economic access to food. Consequently, the income component in this study encompasses agricultural production and non-farm sources. Moreover, in mediating economic access to food factors such as access to markets, prices, and modes of transaction influence the household income (Webb et al. 2002, Saad 2000).

The concept of access to food does not only consist of the economic perspective but also the social perspective as stated earlier. Social access to food is a significant factor that determines whether all household members have equal access to sufficient and healthy food. Social access to food is equally influenced by factors such as age and intra-household social relations.

2.3.3 Food Utilization

Food utilization is a third equally significant attribute of food security. Physiological utilization of food is a nutritional component of food security that is important in determining the extent to which the body is able to make use of ingested food in order to achieve an active and healthy life. There are several factors grouped into consumption and health categories that influence food utilization (Figure 1). Household consumption consists of expenditure on both food and non-food items that are enhanced by an increase in household income. Aspects relating to consumption, such as number of meals per day, access to clean water, dietary diversity, food prices, food quality, food taboos and share of non-food expenditure (e.g. education and health services) are crucial in mediating food utilization (Webb et al. 2002, World Food Programme 2002). These features shape the nutritional and health condition that essentially has a decisive impact on the extent of physiological utilization of food in realizing food security.

2.4 Agricultural development models

Two models of agricultural development and the thinking behind each model are used for policy analysis in this study. These models present theoretical perspectives ranging from the left center, that emphasis on social and equity considerations to the right center that stresses on free market systems and economic consideration. These models are state controlled agricultural development model and market-led agricultural development model respectively (Ashley and Maxwell 2001, Wood 1990). These models of agricultural development have shaped the agricultural system in Zambia during the past two and half decades.

2.4.1 State controlled agricultural development model

State controlled agricultural development model is a conventional statist model for agricultural development that suggests that agricultural development can be achieved through parastatal institutions and state controlled market system (Wood 1990, Stiglitz 2002). This model views agriculture as a sector that has to be highly influenced by state interventions rather than being controlled by liberal policies and market forces (World Bank 2003, Stiglitz 1998). Hence, the argument behind this model is that agricultural production would arise from the state's provision of services to the farmers and through its control of the market (Stiglitz 2002). The major preoccupation of the state controlled agricultural development model is more on social consideration through equitable distribution of national resources than economic and market efficiency (Stiglitz 2004, Wood 1990). Therefore, this model advocates for price fixation, subsidies and an active role of public agencies and institutions in the provision of market, credit, inputs and extension services to the farmers. The thinking behind this model is that stable prices and subsidized goods and services would be an incentive enough for farmers even in remote area to increase their production. Consequently the increase in agricultural production is anticipated to promote employment creation, increase farmers' income and improve household food security.

2.4.2 Market-led agricultural development model

This model is based on the Washington Concesus, a set of liberal economic policies essential for development (Williamson 2000). These policies advocate for development strategies based on privatization, market liberalization, and minimization of the role of the governments in economic activities (Stiglitz 2004a, Williamson 2000). Therefore, the market-led agricultural development model assumes that agricultural production would increase through privatization of parastatal institutions, market liberalization, commodity diversification towards market demanded farm products and promotion of private sector in agriculture (Stiglitz 2004, Kydd and Dorward 2001).

The rationale behind privatization in the agricultural sector is reduction on public expenditure and enhancement of economic efficiency because of efficient allocation of resources by the private sector (Williamson 2000). The increase in investment in agriculture by the private sectors would foster agricultural production. Moreover, it is argued that market liberalization increases competition, corrects price distortion of both agricultural inputs and produce and bring efficiency in the market (Stiglitz 2004, Cramer et al. 2001, Wold et al. 1998). It is further assumed in this model that liberalization of the market would result in high prices of farm produce especially those that are usually below the market price (Wold et al. 1998, Wold et al. 1996). This would be an incentive for investment in the agricultural sector and for farmers to produce more and market more of their produce. Consequently, increase in agricultural production is expected to lead to employment creation, increase farmers' income and household food security (World Bank 2003, Irz et al 2001, Williamson 2000, Wold et al. 1998). However, in order for the small-scale farmers to reap the benefits of a market-led agricultural system it is imperative for them to diversify their farm production in favor of commodities demanded on the market (Bokeloh 2005, Kydd and Dorward 2001).

2.5 Development of Agriculture in Zambia

2.5.1 Changes in Agricultural Policy

Changes in agricultural policy in Zambia can be identified under three main phases. The first phase⁹ was a phase of excessive state-control from 1980 to 1990. This was followed a phase of Structural Adjustment Program (SAP) from 1991 to 2001 that has been replaced during the last five years with a phase of Poverty Reduction Strategy Paper (PRSP). Hence, agricultural policy environment in Zambia has changed from a state dominated environment passing through market liberalization to the current phase of poverty reduction mainstreaming. The general policy objective that runs through all the three policy phases is the need increase agricultural production to achieve self-sufficiency food (Wood 1990, Wold et al. 1998, GRZ 2001).

2.5.2 Phase of State Control (Pre-SAP Phase) 1980-1990

The phase dominated by state-control had two forms of policy environments: an excessive state-controlled policy environment from 1980 to 1983 and an economic transition policy environment from 1984 to 1990. During the early 80s the Zambia's agricultural policy goals focused on achieving self sufficiency in food production and food security through encouraged hybrid maize crop production and promotion of subsistence farmers to move toward market oriented form of production (Wood 1990). The system was mainly based on government price control and subsidy support in both production and marketing. McEwan (2003) affirms that the policy was inclined towards mono cropping of hybrid maize which was getting 90% of the subsidized fertilizers. Credit provision was oriented towards supporting hybrid maize production. Therefore, the extension through training and visit approach and the extension message equally, emphasized on hybrid maize growing by rational use of seed and chemical fertilizers through the Lima program (McEwan 2003, Haug 1981).

⁹ The excessive state control phase actually started after the one party participatory democracy declaration in 1972 (Wood, 1990) but this study considers the period from 1980.

2.5.2.1 Marketing and Pricing Policy

During the pre-SAP period the government agencies monopolized the supply of credit and inputs, as well as the marketing of hybrid maize (McEwan 2003). Farmers were provided with readily available credit through a parastatal National Agricultural Marketing Board (NAMBoard) and government supported agencies such as Lima bank, Provincial Cooperative Marketing Unions and Zambia Cooperative Federation (Mwanaumo 1999). This marketing structure ensured that small-scale farmers in remote area had access hybrid maize market by creation of primary cooperatives and building depots in rural areas (Wold et al. 1997, Wood 1990, Jansen 1990). The maize prices were stable and NAMBoard guaranteed market for farmers' produce. The market environment was characterized by excessive price controls through state fixation of producer and consumer prices and pan-territorial pricing (uniform prices country wide) for both agricultural inputs and produce (Jansen 1990). Such a policy aiming at reducing the social-economic inequality between rural areas and urban areas by increasing income in rural areas while maintaining low food prices for the urban population (Shawa and Johnson 1990, Wood 1990).

However, literature shows that these policies supporting excessive state control of markets were economically inefficient and unsustainable (McEwan 2003, Williamson 2000, Harvard and Mungoma 1996, Wold et al. 1996, Shawa and Johnson 1990, Wood 1990). The collapse of copper prices and raise in oil prices made it impossible for the government to continue with subsidies to both farmers and urban consumers without borrowing from IMF and World Bank (Wood 1990). In response to IMF and World Bank pressure, the government hesitantly tried to liberalize the market, deregulate crop prices and reduce subsidies from 1984 to 1987 (Harvard and Mungoma 2003, Wood 1990). The immediate effects were an increase in the cost of seed and fertilizer that led to an increase in hybrid maize meal in urban areas. However, these policies were abandoned in 1987 due political patronage and riots that erupted in response to food price increase.

2.5.2.2 Credit and Input Policy

Supply of agricultural credit and inputs was equally monopolized by government agencies NAMBoard, Zambia Seed Company, and government supported institutions such as Lima bank and Zambia Cooperative Federation with its Provincial and District Cooperative Marketing Unions (McEwan 2003, MACO et al. 2002, Harvard and Hamungoma 1996). This kind of credit and input supply system with deposits in rural areas enabled small-scale farmers to have easy access to credit, hybrid maize seed and fertilizer (Wold et al. 1996, Wood 1990). The credit provision was also biased towards growing of hybrid maize and small-scale had access to loans for the purchase of hybrid maize seed and fertilizer through government supported financial institutions like Lima bank (MACO et al. 2002, Harvard and Hamungoma 1996). However, credit was mostly given in form of fertilizer and hybrid maize seed (Govereth et al. 2002, Harvard and Hamungoma 1996).

2.5.2.3 Extension Policy: Training and visit

From 1978 Training and visit (T & V) system a top-down approach to extension service provision was introduced in Zambia (Wood 1990, GRZ 1984). This was a programme approach based on regular farm visits by public extension staffs on farmers. The thinking behind this system was to educate farmers on new technologies that were being adapted to meet their conditions (GRZ 1984). Research and development of technologies was being centrally done in research institutes such as Mount Makulu and farmers were passive in the process of research and technology development (Lof and Mulele 1990). Lima¹⁰ Extension Training and Research Program was adopted national wide as a model for extension support to farmers. The main goal of the program was to facilitate the adoption of proven technological packages by small-scale farmers and promote the growing of hybrid maize (Harvard and Hamungoma 1996, Haug 1981).

In the implementation of the Lima Extension Training and Research Program among small-scale and medium scale farmers, extension workers in the field depended on 3 major sources of

¹⁰ Lima technologies emphasized on rational use of inputs on a standard unit of land, Lima (quarter of a hectore) though the term Lima in local languages literally means to cultivate. The rational use of inputs was facilitated by a Lima kit, a rope to accurately measure land and calibrated dispensers for measuring seed, fertilizer and insecticides required in a given measured plot.

information. Firstly, Lima crop Memos from the Research branch in the Ministry of Agriculture and Water Development provided information on what was to be tried and further refined for each of the provinces (GRZ 1984). Secondly, the research branch also provided Crop Advisory Sheets that were updated from time to time by the Mount Makulu-based researchers (Lof and Mulele 1990, GRZ 1984). Thirdly, a guiding manual called Resource Guide Data in Agriculture written by the Department of Agriculture guided extension officer in the adaptation of new technologies and extension service provision in general (Lof and Mulele 1990, GRZ 1984). Greater numbers of farmers in rural areas were reached through the Lima and (GRZ 1984). National Rural Information Services played a key role in supporting extension provision through radio broadcasting of various agricultural programs in seven main local languages.¹¹ Agricultural extension service provision was implemented within various rural development programs such as integrated rural development program, Area development projects and Village Agricultural Program (GRZ 1984). These development interventions were well supported by the foreign agencies such as, International Fund for Agricultural Development, World Bank, German Agency for Technical Cooperation (GTZ), the British Overseas Development Administration (ODA), and the Dutch Technical Assistance (GRZ 1984).

2.5.3 Structural Adjustment Program (SAP) phase 1991-2000

In 1991 the new government Movement for Multi-Party Democracy (MMD) embarked on agricultural policy reforms as part of the mainstream SAP. The main thrust of the policy reforms in the agricultural sector was to

“Liberalize the agricultural sector and to promote private sector development and participation in the delivery of agricultural services. This would be achieved through the creation of an enabling environment for private sector participation through measures such as withdrawal of government involvement in production, marketing and distribution of inputs privatization of parastatal elimination of price controls and elimination of direct subsidies”

(GRZ 2001:4).

¹¹ The languages are Bemba, Kaonde, Lunda, Luvale, Lozi, Nyanja and Tonga.

The agricultural policy during SAP phase aimed at ensuring food security, increased production of agro-based raw materials, increased agricultural exports, generation of income and employment through increase in agricultural production (GRZ 2001). The strategies towards policy implementation were diversification of agricultural production, development and promotion of appropriate technology. The areas of technology emphasis were prevention of soil erosion, facilitating and strengthening the provision of the agricultural services by the private sector in order to increase productivity especially among the small-scale farmers (Saasa 2003). Parastatal agencies and government supported institutions were abolished during the SAP phase. Furthermore, in 1994, Agricultural Sector Investment Programme (ASIP) was formulated and launched in 1995 as a tool for implementing the IMF and World Bank supported policies of liberalization and privatization in the agricultural sector (GRZ 2002).

2.5.3.1 Credit and Input Policy

During the early 1990s the government created three facilities as alternatives to the role of NAMBoard in credit and input supply after NAMBoard was abolished. The first facility was the Agricultural Input Revolving Fund (AIRF) was accessed by Lima bank, CUSA (Credit Union and Savings Association) and Program Against Malnutrition (PAM) to market fertilizer on government's behalf to small-scale farmers (MACO et al. 2002, Tviland 1996, Kokwe 1997). Secondly, Fertilizer Support Loan Facility (FSLF) accessible through the Lima bank by local manufacturers, importers and suppliers of fertilizers such as Sable transport, Nitrogen Chemicals of Zambia, Zambia Cooperative Federation-Finance Services (ZCF-FS) and Mazabuka Marketing and Development Company (MACO et al. 2002, Harvard and Mungoma 1996). Thirdly, the Trader/ Agency Training Facility was a capacity building facility for the local fertilizer traders to later take over the functions of fertilizer supply and distribution as the government hoped to pulled out (Saasa 2003, MACO et al. 2002). However, the selected government supported organizations continued to have a poor loan recovery (MACO et al. 2002, Harvard and Mungoma 1996).

From 1994 to 1997 Agricultural Credit Management Program (ACMP) was in operation to improve recoveries and improving credit management Cavmont Merchant Bank, PAM, Investrust Merchant Bank, Swarp Agricultural Development Company and Cornplus Ltd were appointed as

Credit Managers to operate as a conduit for delivery of government agricultural inputs to small-scale farmers (Saasa 2003, MACO et al. 2002). These organizations were required to appoint a network of private Credit Co-coordinators to provide inputs on credit and cash terms to farmers. The recovery rate was still very poor (3%) under the ACMP (MACO et al 2002). Most Coordinators failed to remit money they recovered from farmers to the respective credit managers while others collected loan processing fees from farmers but failed to supply inputs. During this period Lima bank was liquidated and ZCF-FS demised while a semi autonomous Food Reserve Agency (FRA) was established in 1995 (MACO et al. 2002). The main functions of FRA were to establish and manage the national food security reserve by purchasing hybrid maize from domestic market (a buyer of the last resort), collection and dissemination of market information from neighboring countries and world market, promote grade and weight standards for the marketing of food commodities and manage and lease out government-owned storage facilities (Saasa 2003, MACO et al. 2002). However, in 1997 the government transferred the responsibility of Credit managers under the ACMP and fertilizer supply to FRA.

2.5.3.2 Marketing and Pricing Policy

During the phase of Structural Adjustment Program, the prices for both agricultural inputs and produce were freed (Saasa 2003, Mwanauo 1999). The overall objective of government's agricultural policy is to promote the development of a competitive, efficient and transparent private sector-driven marketing system (GRZ 2001). The government from time to time has continued to intervene in the marketing of inputs, maize and maize meal causing uncertainties among the private sector (Saasa 2003, GRZ 2002). The major reason for government involvement is that it can serve the remote area where the private sector cannot reach (Saasa 2003, GRZ 2001, GRZ 2003). Nevertheless, seed and fertilizer prices have been steadily increasing since the market liberalization as compared to the seasonally fluctuating low hybrid maize prices marked by high prices during the growing season and lowest during the harvest (Harvard and Mungoma 1996). The loss of marketing structures such as NAMBoard had removal of subsidies has made it hard for the small-scale farmers to access reliable maize market (Njobvu 2003). However, the Food Reserve Agency has continued being a buyer of the last resort (MACO 2002).

2.5.3.3 Extension Policy: Demand-driven extension approach

In order to make extension services and technologies more relevant to the farmers, demand-driven extension approaches have been promoted since 1991 (GRZ 2001).

Demand driven extension approaches are methods of extension provision that are problem solving oriented based on what farmers demand (Haug 1999). The major problem was increase in drought and poor soil fertility (Tembo and Haggblade 2003 GRZ 2001, Mwanaumo 1999).

The agricultural policy during the SAP phase stressed on sustainable agriculture and promotion of appropriate technology to improve soil fertility, prevent soil erosion and soil water retention (GRZ 2001, Mwanaumo 1999). The need to develop conservation farming technologies was recognized as a means to reverse and sustain soil productivity (Tembo and Haggblade 2003). Both government and private institutions such as Golden Valley Agricultural Research Trust, Conservation Farming Unit and National Farmers Union have been involved in the development and promotion of crop diversification and conservation farming practices (Tembo and Haggblade 2003). Hand hoe basin minimum tillage (potholing), agro-forestry and minimum tillage with the ox-drawn ripper plough are among the most common practices being encouraged (Tembo and Haggblade 2003). On the other hand, there has been a reduction in the usage of draught technology due to loss of approximately 16% of the cattle during 1995-2000 especially in the southern and Western provinces (Saasa 2003).

However, despite claims by proponents of liberal agricultural policies that the reforms would improve the lives of people in rural areas and reduce poverty, research shows that the contrary has happened (Njobvu 2004). Njobvu draws empirical evidence from research done over 10 years that shows decrease in improved seed usage from 43.6% in 1990/91 to 17% in 1997/98 growing seasons (2004). The proportion of small-scale farmers using chemical fertilizers declined from 31.4% to 7% over the same period while access to credit has also decreased by 50% among small-scale farmers. The majority of small-scale farmers have lost access to credit facilities, farm inputs, extension and agricultural markets over the SAP period. Without access to inputs and agricultural services, small-scale farming cannot improve farm level productivity, reduce poverty and contribute to economic development. Having replaced the SAP with PRSP, it is still not certain if the PRSP policies and approaches will yield desired tangible benefits to the rural farmers.

2.5.4 Phase of Poverty Reduction Strategy Paper (2002-2005)

The Agricultural sector has been singled out under the Poverty Reduction Strategy Paper (PRSP) as the main driving force for poverty reduction (Saasa 2003, GRZ 2002). The Agricultural Commercialisation Program¹² (ACP) is used as a means to achieve poverty reduction and economic growth among the small-scale farmers. The government has identified food insecurity as a poverty problem and instituted programs such as Food security pack program in 2001 and Agricultural Input Support Program established in 2002/2003 targeting small-scale farmers (GRZ 2004b). The vision for the agricultural sector as articulated in the National Agricultural Policy (NAP) is to promote development of an efficient, competitive and sustainable agricultural sector, which assures food security and increased income as well as contribute towards the overall objective of poverty reduction and economic growth (Saasa 2003, GRZ 2001). Government involvement has been defined as provision of appropriate and affordable yielding enhancing technology, improved seed and fertilizer, affordable credit system and market for the produce in outlying areas (GRZ 2002). Agricultural Commercialization Programme (ACP) has replaced ASIP as a vehicle for the implementation of the Agricultural components of the PRSP recommendation and the National Agricultural Policy (GRZ 2001). Commercialization of Agriculture Program is hoped to transform the agricultural system of small-scale farmers from being limited to subsistence purposes to being business for small-scale farmers. Hence, ACP advocates for crop diversification in the process of developing a market-led agricultural system among small-scale farmers.

2.5.4.1 Marketing and Pricing Policy

Market forces have continued to control the maize prices and agricultural inputs. However, as means of poverty reduction, the government introduced subsidies for agricultural inputs (fertilizer and maize seed) targeting small-scale farmers (GRZ 2004b, GRZ 2002). The concept of primary cooperatives has been re-introduced as means for small-scale farmers to access the credit. The government through Agricultural Input Support Program is subsidizing 50% of fertilizer and

¹² Commercialization of agriculture in this context refers to a process of transformation of the small-scale farmers' agricultural system from an oriented of production for subsistence to a market-led kind of production so that they get the promised benefits of market liberalization (GRZ 2001).

maize seed for one hector. Farmers are required to pay their 50% share of the total cost as a condition to access the inputs (FEWS NET 2004).

2.5.4.2 Extension Policy: Participatory Extension Approaches

During the PRSP phase, the Zambian government has adopted a new model of agricultural extension provision to small-scale farmers called Participatory Extension Approaches (PEA). The ministry of Agriculture and Cooperatives defines PEA as a methodology and systematic process for joint learning by both professionals¹³ and farmers (GRZ 2002). The main thrust in this extension approach is involvement and participation of the entire small-scale farming community in a given village not only in adoption of technology but also in the process of developing it (GRZ 2002). Such an approach aims at bringing about relative change in behavior and attitudes among farmers towards their environment and taking responsibility of their own development (GRZ 2002). PEA is being implemented using a public-private partnership method in which agents in the non-government sector such as GTZ, World Vision, Cooperative League of the USA (CLUSA), and Africare are working with public extension workers at a community level. The main tenets in the extension services are HIV/ AIDS, conservation farming and promotion of crop diversification. PEA is hoped to aid transformation of small-scale farmers' farming system from growing crops for subsistence to growing of crops and rearing of livestock for commercial purposes (GRZ 2001).

3. RESEARCH METHODS

Qualitative research methodology was used in this study. Qualitative research is an approach to social research that emphasizes on words in collection and analysis of data (Bryman 2004). It seeks for an in-depth understanding of issues of concern. In design, qualitative research is inductivistic, constructionistic and interpretivistic (Bryman 2004, Salkind 2003). It is inductivistic in that it seeks to generate a theory rather than testing a theory (Bryman 2004). A basic principle underlying qualitative research of viewing social life as resulting from processes

¹³ Researchers and Extension Officers

and changes in people's interaction makes it to be constructionistic (Bryman 2004). Bryman further elaborates on interpretivism as one of the central tenets of qualitative research that emphasizes on interpretation of the social world from the perspective of the people being studied.

This kind of methodology was employed because it allowed the unfolding of policy changes over time and making interconnections to the actions of small-scale farmers. Additionally, it was a flexible approach that enabled a combination of various participatory research methods in collection of data and analysis. Moreover, it fostered deeper understanding of the impact of agricultural policy changes on small-scale farmers.

3.1 Selection of the study area

Zambia was conveniently selected because she has experienced major agricultural policy changes in the last 25 years. Additionally, the country has a great potential for agricultural development yet food insecurity is increasingly becoming prevalent and a national disaster.

Manyepa village was chosen because it is a known small-scale farming community. The village is located in a region with a history of high agricultural productivity in both cattle and maize. Besides, the area is known to have been impacted by policy changes in agriculture. It is also quite a virgin area for research that seeks to assess the impact of agricultural policy changes on small-scale farmers. Moreover, though most rural areas are inaccessible during rain season, this study site was quite accessible by road. This was an important factor for consideration because the period for data collection would include part of the rain season. Finally, the researcher was quite conversant with local language and cultural practices in the area.

3.2 Selection of Informants

Firstly, in a group discussion with traditional leaders¹⁴ the terms household and household head were defined. A household was defined as a group of persons living and eating together. In polygamous households, the husband was assigned to the most senior wife's household so as to avoid double counting in cases where the wives were identified as separate household (CSO

¹⁴ Acting village Headman, village secretary and one woman a contact known for her active involvement in working with some Non-Governmental Organizations (NGOs).

2004). A household head was defined as a person whom all members of the household regard as one who normally makes decisions pertaining day to day the running of the household (CSO 2004).

Using an updated village register, a total of 105 households were listed and later categorized into four poverty levels as described in the next paragraph. Those households with heads of 30 years of age and above were purposively selected from all poverty levels to constitute respondents informants. Purposive selection is a non-random selection method that allowed the researcher to strategically choose informants relevant for the research questions (Bryman 2003). In this study the age criterion was important in order to get informants who have experienced the impact of policy changes in the agricultural sector at least for the past 20 years.

3.3 Wealth and Well-being Ranking

In order to get a comprehensive understanding of the impact of the policy changes in the village, it was imperative to purposively have informants from various poverty levels. Poverty is a complex multidimensional concept whose classification has a cultural orientation that would be captured through participatory research tools such as wealth and well-being ranking for households (Mikkelsen 2005, Grandin 1988, Chambers 1997). Therefore, it was appropriate to use this method in order to capture the complex local realities of poverty as experienced by local people. Moreover, wealth and well-being ranking in poverty level classification does not need absolute data on household income which is often difficult to measure, costly, and coupled with reductionism and low credibility (Chambers 1997). Local people have more to value in addition to income, hence wealth and well being ranking was appropriate as it permitted use of additional indicators deemed relevant to the local situation (Chambers 1997). Wealth and well-being ranking is done by local people sorting out household cards into piles and the criteria for sorting discussed either before or after sorting. However, the same exercise can be done by other methods such as social mapping (Chambers 1997, Pretty et al.1995). In this study, card sorting was most convenient because it required less time and could easily be done for 105 households.

Names of Household heads were written one on each card and a female key informant sorted the cards into defined poverty levels. It is recommended that wealth and well being ranking be carried out by at least three informants (Pretty et al 1995). The process was repeated with a male key informant and finally with a group of five informants in order to enhance reliability and credibility of the results. The criteria used to define each poverty level were listed at each instance and collectively agreed upon in the case where the group did the ranking.

Snow ball sampling was used for the selection of informants for semi-structured interviews in each of the poverty levels. Snow ball sampling is a purposive selection of informants in which the first informant directs you to the next informant with same or similar characteristics and the series continues (Mikkelsen 2005, Bryman 2004, Salkind 2003). It was important to use this method because it emphasized on selection of informants that have not only experienced policy changes in the agricultural system but also are known to have views on the issue. For the purpose of consistency in selection of informants in a given poverty level and in order to reduce the problem of choice of the next informant, it was helpful to give an informant a list of households in a particular poverty level from which to choose the next informant. In cases where the household head was not available for the second time, he or she was replaced with the someone who normally assumed household heading provided the selection criteria were met. However, such cases were very few. So as to get information on the changes in gender food security gap, it was imperative to purposively include sex as a criterion in the process of selection of informants at every stage of data collection.

Based on the age, sex and poverty level criteria, information from semi-structured interviews and advice from local research assistants, the participants for focus group discussions were purposively selected. Key Informants for follow up interviews after group discussions were chosen from focus group discussions. For triangulation purposes, some key informants from relevant institutions¹⁵ were chosen on the basis of being in an administrative position. Government officials in the Ministry of Agriculture and Cooperatives (camp extension worker, district agricultural coordinator and district extension officers) were among key informants. Other key informants from relevant institutions were World Vision project manager, district Africare

¹⁵Relevant institutions, involved in agricultural related work at some point in time in the village, were identified by the local people themselves and included Ministry of Agriculture and Cooperatives, World Vision, Africare, Mount Makulu Research Station, Golden Valley Research Trust and GTZ (German Agency for Technical Cooperation).

project manger, Mount Makulu Research Station representative, Seed Control and Certification Institute representative and Golden Valley Research Trust representative. The key person from GTZ (German Agency for Technical Cooperation) in the district was not available for the interviews. However, his representative was interviewed and information supplemented by camp officer and local contact persons in the village who had worked in GTZ projects.

3. 4 Primary Data Collection

Interviews are a major tenet of qualitative research (Pretty et al 1995, Chambers 1997). These can either be conducted as individual interviews or group interviews. They can either be in form of structured interviews, semi-structured or unstructured. As an inexperienced researcher, structured interviews would have been easy to administer in this study, but they would have been too rigid to allow further exploration on the experiences of farmers with regard to impact of agricultural policy changes on food security. On the contrary, unstructured interviews would have been difficult to handle and the data complex for the researcher to analyze. Hence, this study utilized semi-structured interviews which were easy to administer, allowed further probing, asking of new questions as unexpected issues came up and the data could adequately be handled. Semi-structured interviews are guided conversations in which the order of asking the questions is very flexible with room for further probing (Bryman 2004, Mikkelson 2005 Chambers 1997). Questions were written in an interview guide or check list form that was translated and discussed earlier with research assistants¹⁶ and further re-discussed after pre- testing of the instrument.

Semi-structured interviews were conducted with individual household heads in order to collect information needed to address the second research question as well as answering the third research question that needed gender segregated data. Two trained research assistants helped out in administering interviews. The departure point, for a detailed interview seeking understanding on the impact of agricultural policy changes on agricultural production, income and food security, was a construction of free scoring historic matrices. Consequently, semi-structured interviews were coupled with a visual participatory rural appraisal technique of historic matrix construction.

¹⁶ Two teachers (male and female) were recruited and trained for the field work. Additional three people from the village (one female and two males) were recruited to accompany each of the researchers so as to easily gain acceptance, build trust and rapport.

A historic matrix shows how various factors, agricultural production, income and food security in this case, have changed over time (Karen 1994). Matrix free scoring is when the number of seeds (in this case) to be scored in each box of the matrix is not predetermined in any way and it gives the respondent greater flexibility to analyze the trend and make necessary changes in the process than in fixed scoring (Chambers 2002). Another reason for using free scoring was to avoid the problems associated with adding and averaging in ranking (Chambers 2002, Fielding and Riley 2000). It was very important to use a matrix because this tool fostered commemoration of the past through visualization. This was an indispensable tool in this research since the study focused on a Historic perspective of farmers' experiences with agricultural policy changes. Another purpose for using semi-structured interviews was to provide a means for the selection of topics and variables to include in focus group discussions in addition to selection of group participants as already stated.

Focus group discussions were used to get more information on identified topics. Bryman (2004: 539) defines a focus group discussion as “a form of group interview in which: there are several participants; there is an emphasis in the questioning on a particular fairly defined topic; and the emphasis is upon interaction within the group and the joint construction of meaning.” The focus groups discussions in this study were accompanied by use of visual techniques, drawing of diagrams and seed scoring as a departure point for discussion on specific topics. This was necessary to elicit rich discussions while maintaining a stable focus on the topic, research objective and research questions. Focus group discussions were not only used for the collection of information but also were used as a tool for analysis of data. This provided an opportunity for the informants to analyze their own situation and authentication of my results. Reasons for changes in household income, agricultural production along with their impact on household food security and gender food security gap among female and male headed households were discussed. Scheyvens and Storey (2003) strongly advise that it is important to visit some key informants, from focus group discussions, in less public setting to cross check the information obtained from a group discussion. Therefore, some key informants from each group discussions were identified and followed up for individual interviews on specific topics. These informants were also requested to validate the diagrams obtained from group discussions.

Furthermore, in the course of the stay in the study area and interaction with the community, informal interviews were also done just to cross check and supplement on information collected. These interviews were inevitable since they often arose from individual community members wanting to know more about the research. These interviews were more of a dialogue than actual interviews. Finally by virtue of staying in the village during the research period of seven weeks, direct observation on environmental factors, existing gender relations with respect to crops and livestock, and how the community organized meetings for relief food and input acquisition was done.

3. 5. Local perception and indicators of household food security

In two separate focus group discussions for women and men respectively, the factors constituting the meaning of food security were discussed. Indicators used in assessing trends in household food security since 1980 were availability of food aid, availability of maize seed (from both commercial sources and own saving), frequency of drought, dietary diversity, length of hunger period, frequency of less than two main meals per day, sell of productive assets and wealth status. This set of indicators was collectively agreed upon in a group with both men and women. This was important because it was applicable to the local setting. To visualize the extent of changes in specific indicators, a Historic matrix for trends in household food security for the past 25 years was constructed by scoring against each indicator.

3. 6 Secondary Sources of Data

Secondary data refers to information that was collected by others people but is used by another person in research (Bryman 2004, Mikkelson 2005). Review of secondary sources of data (government agricultural policy documents, statistical data, and academic publications) was very cardinal in getting more information for the research question that sought to identify major policy changes in the agricultural sector in the past 25 years. Additionally, review of literature on agricultural policies and food security gave a sufficient insight on a broader context of agricultural production and food security at a macro level. Nevertheless, very little literature was specific to the study site because few micro studies have been done on agricultural policy and food security in this area. Therefore, to supplement the information, it was reasonable to

interview key informants from institutions that had been identified by the local people as been involved in agricultural related activities in the study area at any point in time.

3.7 Data Analysis

Analysis of data started while in the field with informants analyzing their own situation. A trend analysis approach was used through out because of the historic perspective of the research. Trend analysis is an analytical technique that compares changes in one or several variable over a given period of time, 25 years in this case (Mikkelsen 2005). The trends in household agricultural production, income and food security status were expressed in form of Historic matrices.

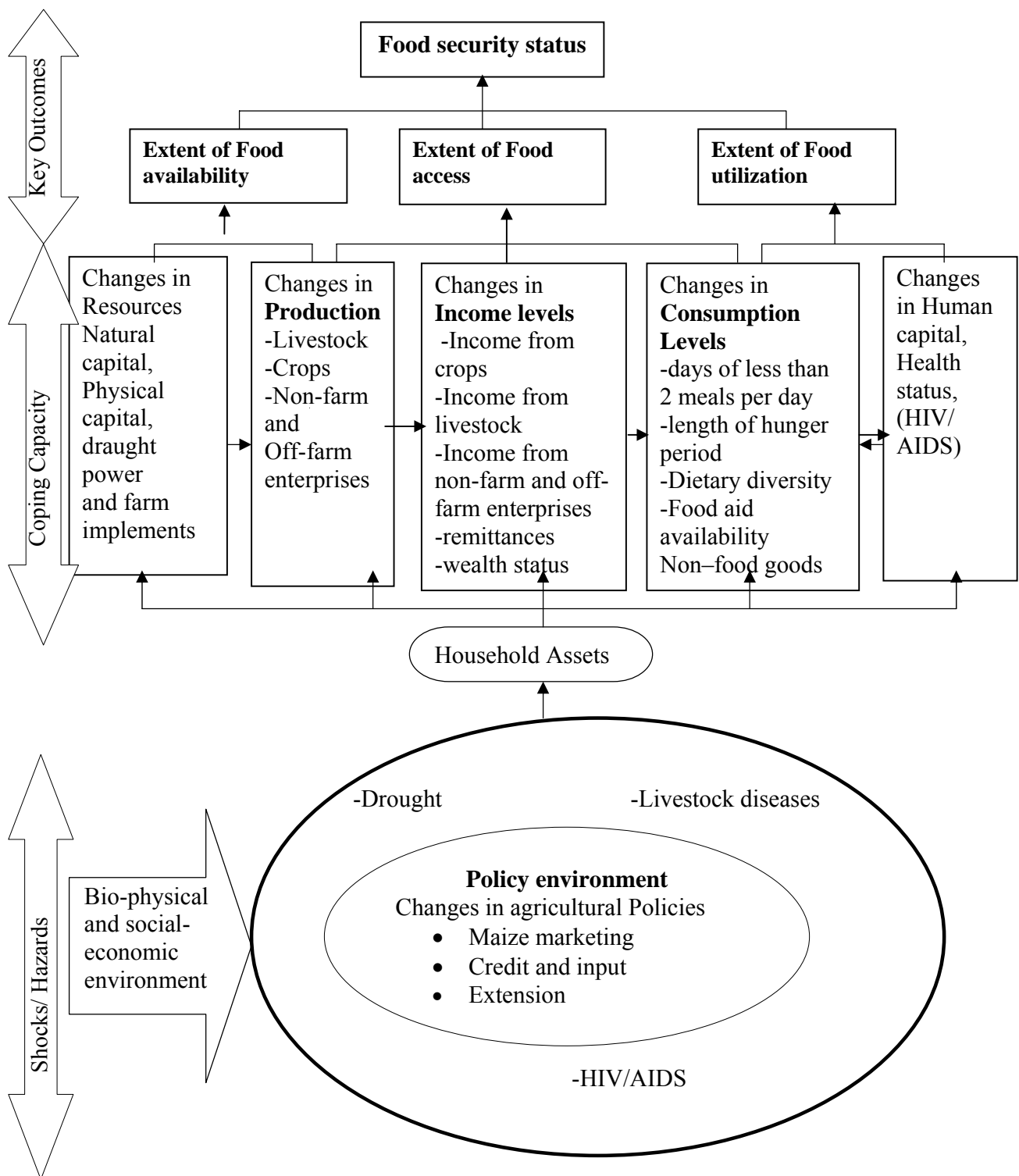


Figure 2: Analytical framework for assessing impact of agricultural policy changes on household food security. Source: Adapted from Webb et al. (2002) and World Food Program (2002)

3.7.1 Analytical framework for impact of agricultural policy changes on household food security

The analytical framework used in this study is borrowed from the conceptual framework for famine analysis developed by Webb, Richardson and Braun (1993). Since early 1990s the conceptual framework for famine analysis has been adapted to various situations and environments. Lately, it has been widely used in the assessment of poverty, hunger and food security (Leichenko and O'Brien 2001, Saad 2000).

The analytical framework uses vulnerability as part in the analysis of impact of agricultural policy changes on household food security. There are a number of different definitions of vulnerability among practitioners and researchers in various disciplines (DIFID 2004). The major area of difference in the meaning of vulnerability is evident in answers that could be given to the question; "vulnerability to what?" Blaikie et al. (1994:9). Some use the term vulnerability to refer to proneness to shocks or hazards such as vulnerability to drought. On the contrary, others use vulnerability to mean the susceptibility to a sudden decrease in a defined outcome of shocks such as vulnerability to food insecurity (Ellis 2003). Devereux (2002) defines vulnerability as exposure and sensitivity to livelihood shocks while Ellis (2003) gives a graphic impression of vulnerability as 'living on the knife edge' where a slight push (shock) may send households over the edge into food insecurity.

This study considers vulnerability to food insecurity with an operational meaning of vulnerability as not only exposure of households to shocks in agricultural policies but also coping capacities of households in determining household food security status. Therefore, vulnerability is a dynamic process triggered by changes in biophysical and social-economic conditions. Three main sub-concepts of vulnerability (shocks or hazards, coping capacity and key outcomes) are used in the analytical framework.

3.7.2 Shocks

Shocks refer to sudden and unexpected occurrences. The point of departure in the framework is agricultural policy changes as shocks to small-scale farmers. The sudden changes in maize marketing, credit and input supply and extension that have characterized the agricultural policy environment in Zambia have occurred within a broad biophysical and social-economic environment. Therefore, agricultural policy related shocks, drought, livestock morbidity and HIV/AIDS define the context in which sudden agricultural policies changes have occurred. Hence, shocks in agricultural policies cannot be looked at in isolation. The exposure to shocks triggers coping strategies and a household's coping capacity results into either failure or success to attain desired food security status.

3.7.3 Coping capacity

Shocks in agricultural policies have an impact on household assets upon which the coping capacity of households depends (Ellis 2003, World Food Program 2002). The components within the coping capacity are interrelated such that changes in resources influence production levels that in turn invoke changes in household income levels attributing to changes in household consumption for both food and non-food items . Nevertheless, the coping behavior adopted by households threatened with food insecurity is either erosive or non-erosive. Erosive coping behaviors causes a further loss of household assets such as selling of productive assets while non-erosive behaviors (such as reducing consumption on non-food items, reducing amount of food intake, hiring out human labor and gathering wild food) tends to prevent a decrease in household assets status (Ellis 2003, Devereux 2001). Due to shocks and adopted coping behavior, changes in the levels of household resources, production, income and consumption levels have a decisive influence on determining key outcomes of agricultural policy changes.

3.7.4 Key outcomes

Key outcomes of agricultural policy changes on small-scale farmers are extent of food availability, extent of access to food and extent of food utilization. The three outcomes essentially determine the major outcome, household food security status. An integrated interaction of changes in resources and production contribute to physical availability of food while household production, income, and consumption interaction determine the extent of economic access to food.

Adverse effects of disease on physiological utilization influence utilization of food. In as much as consumption levels influence the health status and food utilization, diseases such as HIV/AIDS influence both household production and consumption levels by reducing labor, reducing the share of expenditure on food while increasing share of expenditure on medication and caring for the sick in a household.

3.8 Validity and reliability

There is no uniform standard in assessing quality of qualitative research. The use of validity and reliability is often associated with quantitative research. Consequently, questions regarding appropriateness of using these as indicators of quality research without changing their meaning often arise in qualitative research. Reliability, the extent to which a study can be replicated under identical conditions, is practically impossible in a social setting that is always in flux. Internal Validity, the extent to which the research instruments really measure what they intend to measure is quite feasible to take into account in qualitative research (Mikkelsen 2005). However, the external validity, the degree to which the findings can be generalized is problematic in qualitative research that often uses non-random sampling techniques and small samples (LeCompete and Goertz in Mikkelsen 2005). Some authors in assessment of quality of qualitative research have argued for usage of alternative criteria such as credibility, conformability and dependability while others have argued for adaptation of validity and reliability to qualitative research without changing the terms (Barker and Pistrang 2005, Mikkelsen 2005, Chambers 1997, Mason 1994).

In this study the following practices were observed to ensure credibility, validity and reliability of results. Most of the criteria taken into consideration were borrowed from Elliott, Fischer, and Rennie (1999), Barker and Pistrang (2005) and O'Leary (2004).

Data in this study was collected in a systematic and rigorous way using diverse participatory data collection methods. These methods were appropriate for the reasons explained earlier. Internal triangulation, cross checking of data using different research methods within qualitative methodology, was done using at least three research methods. The use of various sources of data helped to confirm the authenticity of the information and sources (O'Leary 2004). Additionally, transparency of procedure was upheld through a detailed and reasoned description of how the data was collected and analyzed. In addition, a disclosure of study context (researcher's position as student, study area and purpose of study) in this study provides a reader a better footing to understanding the results and conclusions of the study. Respondent validation on diagrams constructed in group discussions was also done. This was important for the informants to confirm if the information translated from the ground or black board onto a paper was actual representation of what was obtained in the group discussions. Moreover, allowing the informants to analyze their own situation authenticates the findings. Provision of sufficient examples of actual observations in form of photos and quotation of actual words from informants makes data in this study more explicit. Barker and Pistrang (2005) elaborates that information directly communicated from informants to readers does not only provide a comprehensive understanding of data but also gives an opportunity for the readers to judge the correctness of the analysis and conclusions made, and possible make alternative conclusions.

To ensure correctness of information, informants in both interviews and focus group discussions were occasionally asked to confirm whether their responses were correctly captured. Above all, loss of information from the informants to the researcher during data collection and from the time of data collection to further analysis of results and write up of this thesis was minimized by taking of notes and as well as voice recording.

3.9 Ethical considerations

The ultimate aim of research is production of new knowledge and it is imperative that this process is done with integrity and rigor (O'Leary 2004). O'Leary further elaborates that researchers are in a power position of generating new knowledge and this process goes along with responsibilities and obligations expressed as ethical considerations. Ethics in research simply refer to modes of right behavior of a researcher from research design, data collection, and analysis of results to publication of research findings and fulfillment of any other obligations (Mikkelsen 2005). Ethical considerations are important in ensuring the integrity of the knowledge produced and dignity and well-being of the researched (O'Leary 2004). In this research ethical principles were discussed with research assistants before starting field work and the following ethical issues were considered in the field.

Upon reaching the study area, permission was requested from the village leadership. It was explained to the acting village headman and his secretary that I was a student from the Norwegian University of Life Sciences and required to do my research in my home country. It was further explained to them what the research was all about. When asked how the village would benefit, it was explained that the village would be added to literature since there is little that has been written on that village. Additionally, other people elsewhere might have an opportunity of learning from experiences of people in this village.

At every group meeting it was wise to start with a prayer since it was in a Christian community and a common practice at most public gathering. This was followed by thanking the informants for coming to the meeting. This was vital as it showed respect and recognition of the informants' value as source of the needed information and made it easier to introduce the topic for group discussion. Also after the interviews and group discussions, words of sincere appreciation were rendered to the informants.

Ensuring participants have given informed consent is very important in social research in order to respect individual rights and prevent emotional harm to participants (O'Leary 2004). However, O'Leary admits it can be hard sometimes to identify or predict risks of potential emotional harm (2004). In this research, informants were told of the nature and purpose of the research, how the information will be used and types of activities that they would be involved as well as an

approximation of time it would take. They were also reminded of their participation as being voluntary and the right not to respond to questions they felt would be an invasion of their privacy. It was also made clear to participants that they had a right to withdraw at anytime in the process of data collection. Furthermore, for some women it was required to get permission to attend group discussion from their husbands so as to prevent any harm and show recognition of the authority of the husbands. Since some participants in this research were as old as 79 years, it was important to be patient with them and have breaks in the course of an interview whenever they demanded. Permission to record the discussions and interviews was also requested. In order to avoid plagiarism that student researchers are often accused of, all secondary sources of data were appropriately acknowledged.

The principle of confidentiality in social research is central in ethical considerations (Mikkelsen 2005). This involves protecting the identity of individuals who provided research data from a third party. Hence, in this study no public association of information and individuals was made exception in regard to certain pictures and village name where consent was given. All identifying data was securely stored and kept by the researcher and the manner of publication of results does not allow the reader to identify particular individuals who provided the information.

Respect was shown to all the participants, their views and sincere appreciation for their time and valuable information. Respect for cultural practices such as not doing any data collection during the mourning periods for each of the three funerals held was very important. Show of respect contributed a lot to building rapport and mutual trust between the researcher and informants. It was prudent in this study for the researcher and his assistants to be appropriately dressed greet¹⁷ people even if you have nothing to do with them and accepted the food they offered¹⁸. In cases where it was not possible to take the food, heartfelt gratitude for the offer was shown and reasons for not taking the food politely explained to participants.

¹⁷ Failure to greet people is often associated with pride and impoliteness among the Tonga speaking people.

¹⁸ It is not right in this society to ask if a visitor would like to have something to eat or drink, so a common traditional drink 'Chibwantu' is often given to visitors as a sign of generosity and welcome to a home. Acceptance and appreciation of their welcome is shown by taking even a little of the given food or drink.

Despite observing the above ethical considerations, an ethical dilemma was eminent in focus group discussions. It is generally a sign of disrespect towards an elderly person for a young person to constantly correct him or her in a public setting, yet focus group discussions were characterized by some dominant speakers who needed to be controlled from time to time. There was no standard way of compromise in such situations. Options utilized included constantly reminding the group of the rule of speaking one at a time, appointing a fellow elderly person to regulate speakers and using polite words as much as possible to control the dominant speakers. However, the underlying principle was as much as possible not to sound impolite to elders yet give opportunity for everyone to express their views.

3.9.1 Limitations

The conclusions from this study cannot be generalized. Though there is much detail covered, the study covers a small geographical area and the non-random selection of informants cannot allow generalization of results. Nonetheless, selection of informants from each of the four poverty levels and the sex criteria in respondent selection made the sample to be as representative as possible. Moreover, reasons meriting the use of non-random selection methods are embedded in research questions and have been explained earlier. However, use of 30 years as a criterion for the selection of informant could be a limitation in that it excludes views of young upcoming farmers in whose hands lays the future for the community. On the contrary, these people could not have provided the needed information of the past experiences so cardinal for the study.

The researcher's lack of adequate experience in field work could have influence the way in which the information was collected and analyzed. This was the first time for the researcher to conduct his own field research. Therefore, the past experience as a research assistant coupled with innovation and working as a team with his research assistants helped to fill up the gap of inadequate field experience. On the contrary, the use of research assistants despite having trained them could have as well influenced the nature of results obtained since they were involved in interviewing and note taking. Measures taken in this regard was the use of an audio recorder as well as taking down notes on every interview. This gave more detail and meaning of notes written by research assistants and an opportunity for the researcher latter to listen to the respondents themselves.

The period of data collection was quite challenging in that farmers were starting clearing their fields and their work was gradually becoming intensive. From the onset of the first rains in mid November, farmers became very busy in their fields. Such an environment could have affected the concentration of the informants during interviews as well as made data collection quite difficult. In addition, being a hot season some days were very hot such that it was quite difficult to either carry out interview or group discussions. Therefore, it was imperative to interview quite a large number of farmers and spend more time in the field in order to get as much information as possible.

In some cases, the flow and process of data collection suffered from disruptions. Common disruptions came from visitors whom an informant had to attend to and also interviews were disrupted whenever a female informant had to attend to either a child or cooking. There were minor and few disruptions among very old informants who needed some breaks. On the other hand, major disruption in the conduct of data collection came from the three funerals that were held in the village. During each of these solemn occasions, no data was collected during the mourning periods. These funerals could have changed the emotional atmosphere of the informant as it was often reflected in words loaded with solemn expressions and sympathy in greeting in subsequent interviews and focus group meetings. Such an emotional state of informants could have influenced the results. This situation underscores the need to stay much longer in the village and use of a larger sample size despite the study having a qualitative orientation.

Despite the researcher being conversant with the local language, there is always a risk of loss of information in the process of translation. Research assistants and one high school teacher of local languages helped a great deal in the translation of questions and key terms before starting collecting data.

Moreover, limitation in resources and time influenced the manner in which the research was done which could have as well influenced the results obtained. It would have been better to have used same group members to validate their results from focus group discussions but time and resources could not allow. However, the verification was done by at least 2 informants who were part of the focus group that gave the information.

4. STUDY AREA

4.1 Country context

Zambia is in the near central part of Southern Africa with area coverage of 753,000 square kilometers. The country is land locked with Malawi, Tanzania, Democratic Republic of Congo, Angola, Namibia, Botswana, Zimbabwe and Mozambique as shown in figure 3 below. Regarding government administration divisions, the country is divided into nine provinces that are further divided into 56 districts (CSO 2004). English is an official language and there are 73 local languages out of which seven are major local languages (Muliokela 1995).

In terms of religion, most of the people in Zambia are Christians while the rest are either Muslims or Hindus and a small portion do not have any religious affiliation at all. Zambia's population is estimated at 11 million with about 64% of the population living below the income poverty line (one United States dollar per day) and 47% is undernourished (UNDP 2005, FAO 2005). Life expectancy at birth is about 38 years for men and 60 for women (UNDP 2005). The country's HIV/AIDS prevalence (15-49 years) ranges from 13.5% to 20% (UNDP 2005). In the 2005 Human Development Index ranking, Zambia with a GDP per capita of 877 PPP¹⁹ in comparison with the United States dollar (UNDP 2005).

Zambia gained independence from Britain on the 24th of October 1964 and soon became a republican state under the presidency of Dr. David Kenneth Kaunda. From 1964 to 1972, Zambia had three significant political parties: United National Independence Party (UNIP), African National Congress (ANC), and the United Progressive Party (UPP). However, in 1972 opposition parties were banned and Zambia followed a political ideology of one party participatory democracy with Kaunda's United Independence Party (UNIP) as the only party. During late 1980 the political environment changed towards multi-party democracy. In 1991 Kaunda lost elections and President Fredrick Titus Jacob Chiluba and his Movement for Multi-party Democracy (MMD) government came into office. Since 1991, Zambia has followed a multi-party democratic

¹⁹ PPP (purchasing power parity) is an estimate of the exchange rate required to equalise the purchasing power of different currencies, given the prices of goods and services in the countries concerned. This is a measure for a decent standard of living that accounts for price differences across countries, allowing international comparisons of real output and incomes (UNDP 2005).

system with at least 6 opposition political parties and (MMD) has been the ruling party. At the end of Chiluba's second term of office in 2001, MMD presidential candidate Levy Patric Mwanawasa won the election and became the third republican president of Zambia.

The country's vegetation is mainly savannah type varying from scattered and open forest conditions in the south to tall dense woodlands in the north and northwest provinces. Zambia is endowed with four major rivers (Zambezi, Luangwa, Kafue and Luapula) and seven big lakes (Kariba, Bangweulu, Mweru, Tanganyika, Chifunabuli, Walipe and Kabompo). The country experiences a tropical type of climate with regional variations in rain pattern from less than 800 mm mean annual rainfall in the southern region to more than 1000 mm in the northern and northwestern (Muliokela 1995, Saasa 2003). Hence, the country is divided into 3 major agro-ecological regions mainly on the basis of rain.

Region I is characterized by low rainfall, short growing season, and medium to high risk of drought and covers major valleys and parts of Southern and Western provinces (Saasa 2003). Region II is characterized by mean annual rainfall between 800-1000 mm, variably long growing season and medium to low risk of drought. Region II is sub divided into sub-region IIa covering sandveld plateau of central, Eastern, Lusaka and Southern provinces while sub-region IIb covers Kalahari sand plateau and the Zambezi flood plains in the Western province (Muliokela 1995). Region III is noted by a mean annual rainfall above 1000 mm, long growing season and almost no risk to drought and the region covers the Northern, Luapula, Copperbelt, and North Western Provinces (Muliokela 1995, Saasa 2003).

4.1.1 Description of the study site

The study was conducted in Manyepa village located in Pemba, a rural area within Choma district. The district is in the Southern province a region that was once called the maize-belt and food basket of the nation due to its high maize and cattle production before the mid 1980s. Manyepa village is about 24 kilometers from the main business center, Pemba. The nearest health center and schools are about five kilometers from the village.

Manyepa village has 105 households with an average of seven people per household. There is only one bore hole as a major source of water during dry season while the rest of the year water

sources are supplemented by a stream called Hakanyona but goes dry usually from mid August till the onset of quite consistent rain (Mid November).

In terms of ethnicity, the village is dominated by Tonga speaking people with a matrilineal type of descent and people have a history of cattle keeping and arable farming especially maize growing. The major source of livelihood is agriculture and households are predominately falling in the category of small-scale farmers growing crops mainly for subsistence with occasion surplus production for sale.

The village is under the agro-ecological sub region IIa with climatic characteristics highlighted above. The vegetation in the area is characterized by Miobo woodlands with a dominance of *Acacia* and *Brachystegia* species. In addition to Manyepa as a village name, the village is also called Lubombo due to a big *Brachystegia boehmii* (mubombo in Tonga) and a dense forest (dominated by the same species). However, only remnant small patches of this forest is still in existence providing timber, honey, mushrooms, firewood, medicine among other numerous benefits to the village.

Regarding farming systems in the village, both livestock and crop production are the most common farm enterprises. The types of livestock kept include cattle, goats, chicken and pigeons. Most common crops grown in the village are maize, groundnuts, sweet potatoes and green vegetables. Mixed cropping is done for most of the crops grown.

Figure 3 below shows the agro-ecological regions and the location of the study site.

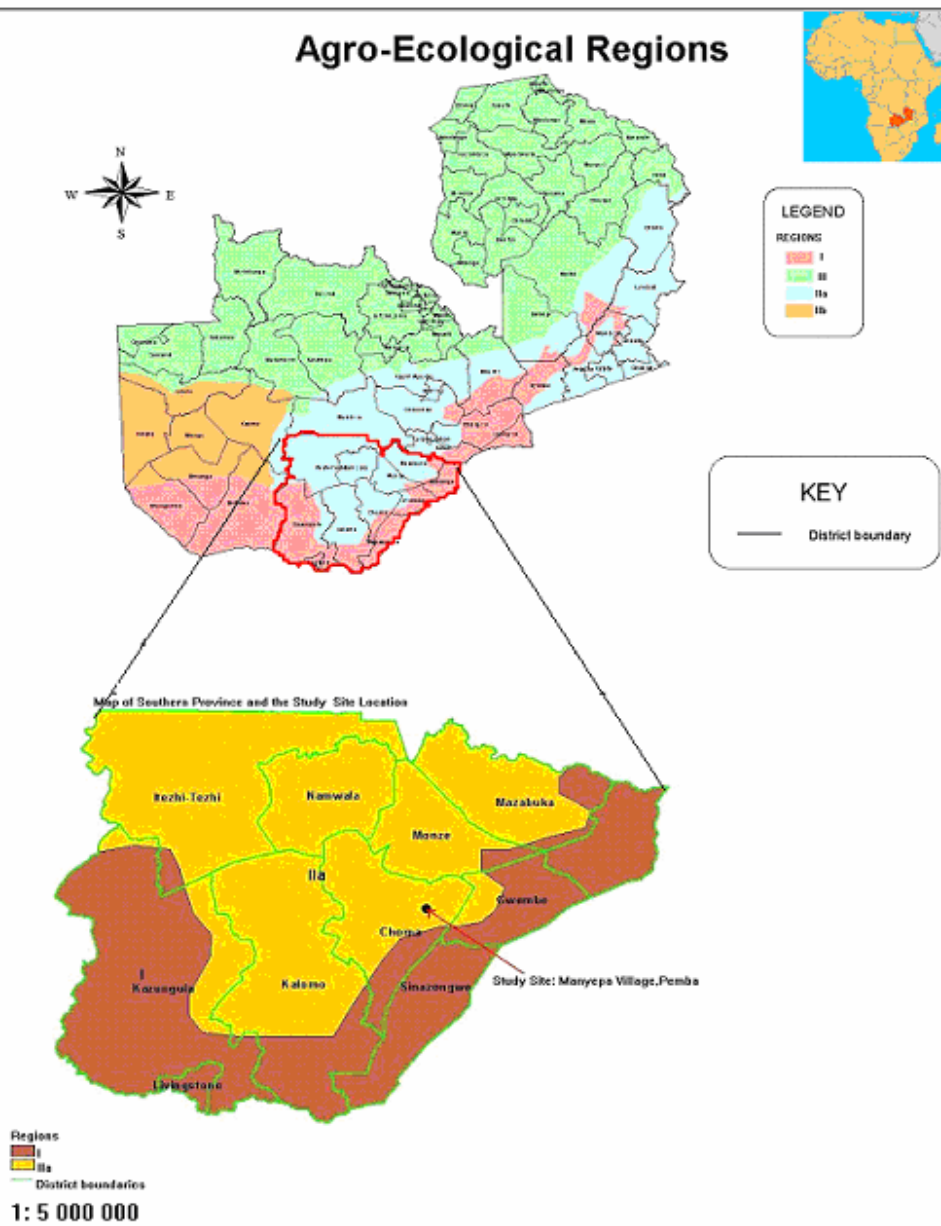


Figure 3: Map of Zambia, Agro-ecological Regions and Study Area
Adapted from Soils Survey, 2002, Mount Makulu: Chilanga

5. FINDINGS AND DISCUSSION

5.1 Wealth and well-being ranking

Food insecurity is a poverty problem (Lister 2004, Sen 1981). Poverty is a multidimensional concept referring to economic, social and political deprivation and exclusion (Lister 2004, Sen 1981). A poverty status of a household or an individual influences the extent of physical access and economic access to food (Maxwell and Frankenberger 1992). However, the perceptions of poverty differ from among individuals and communities. According to the general perceptions of small-scale farmers in the study area, four levels of poverty were identified from wealth and well-being ranking. A profile of poverty for the entire village showing proportion of households in each poverty level is given in Figure 4.

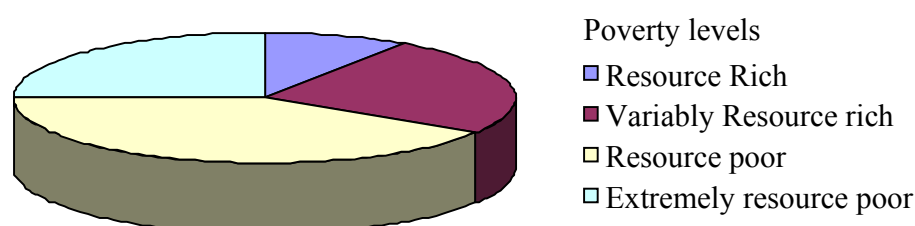


Figure 4: Proportions of households in each poverty level

The total number of households in the village was 105, out of which 41% were women headed and 59% men headed. Within each poverty level there were differences in proportions between men headed households to women headed households. Figure 5 shows gender-poverty profile of the 73 heads of households that were interviewed.

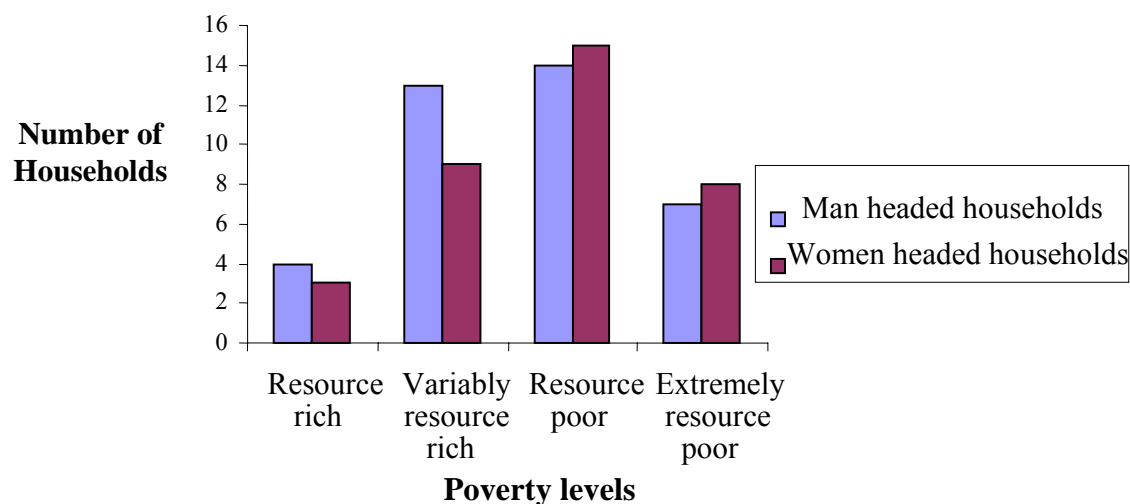


Figure 5: Profile of Gender-poverty levels

The general perception of farmers regarding poverty levels and gender were that the proportion of women headed households is more among the resource poor and extremely poor while the proportion of men headed households is more among resource rich and variably resource rich. The farmers attributed the existences of high proportions of poverty among women headed households to women’s less access to and control over productive assets such as land, draught power, agricultural credit and inputs. On the other hand, Men had relatively high access to productive assets that accounted for their dominance in the resource rich and extremely resource rich groups. Quisumbing et al. (2004) argue that lack of access and control over productive access among women headed households farmers constrains women farmers from increasing their agricultural production. This condition was applicable among small-scale farmers in the study area because the majority of households in the poor and extremely poor categories were women headed households.

The meaning and understanding of poverty in a given society is influenced by physical, economic, social, cultural and political factors (Mikkelsen 2005, Lister 2004, Moser 1989, Sen 1981). In this study, small-scale farmers’ understanding of poverty involved both quantifiable and non-quantifiable attributes as given below.

Table 1: Indicators of poverty and Poverty Levels

Indicators	Resource Rich	Variably Resource poor	Resource Poor	Extremely resource
Livestock	Have more than 10 cattle, more than 25 Goats, more than 10 pigs and more than 20 chickens	Have less than 10 cattle, 10 -25 goats, 5-10 pigs and 10-20 chickens	Have no cattle, less than 10 goats, less than 5 pigs and less than 10 chickens	Have no livestock.
Farm Implements	Have an ox-cart, at least 2 ox-drawn ploughs, an ox-drawn furrower, an ox-drawn harrow, at least 2 chains for these implements and 2 or more sprayers.	Have an ox-chart, either an ox-drawn plough or furrower, a chain for these implements and a sprayer	Have at least 4 hand hoes and at least 1 axe.	Have less than 4 hand hoes and mostly depend on borrowed hand hoes and axes.
Hiring labor	Hire labor most times during farming season	Seldom hire labor	Depend on family labor	Depend on family labor
Crop diversity	Mostly grow several crops apart from maize for both subsistence and selling.	Mostly grow maize and few of other crops like cotton, beans and sunflower for sale.	Grow maize and other crops for subsistence	Grow maize and few other crops for subsistence
Period of eating own harvest.	Feed their family all year round	Feed their families for 9-10 months.	Feed their families often for 5-6 months	There is usually no harvest as the crop is all consumed while in the field.
Children's Pairs of clothes	Several pairs of very good clothing	Fairly a good number of pairs of good clothing	Have few pairs of good clothing	Few pairs of clothes often in bad condition.
Education and medical services	Easily afford education and medical fees	Afford education and medical fees with minimum difficulties	Occasionally afford education and medical fees.	Cannot afford school and medical fees
Other Attributes	Very influential in the village	Influential and are quite active in community work	Have good planning ability for securing food and their living.	Disabled, barren, widowed, have low participation in community work, lack knowledge on growing crops and livestock

According to the farmers' perceptions, ownership of cattle and the number of herds of cattle is identified as the most important asset that distinguishes the resource rich households from the rest. This is because of the multiple uses of cattle in payment of bride price, source of draught power, milk, manure and it is also a form of investment and symbol of cultural prestige. In terms of farm implements, poor households are associated with use of hand hoes and dependent on family labor while the resource rich households have ox-drawn farm implements and a capacity to pay for hired labor. The general perceptions of the farmers are that resource rich households are advantaged by having a robust or high status of household assets that enables them to have enough food through out the year. On the contrary, the farmers describe resource poor and extremely resource poor households as households that are most likely to get deeper into food insecurity whenever they face shocks. This is due to the poor household asset status that gives them less alternatives and less capacity for coping against shocks in agricultural sector.

The farmers identify major shocks in agricultural sector as policy changes, drought and livestock diseases while HIV/AIDS is perceived both as a shock and major challenge. Other studies done in Zambia have equally identified agricultural policy changes as shocks to farmers (Kokwe 1997, Harvard and Mungoma 1996).

Box 1: Perception of a farmer towards agricultural policy changes in Zambia

It is hard to trust any government nowadays because they keep on changing the rules on how to get credit and inputs as well as how marketing of crops should be done. It is very hard to predict what would happen next. For example, from the time MMD come to power in 1991, all deports closed down suddenly, Lima bank and NAMBoards disappeared. We were stranded where to get inputs and sell our maize. Even today it is hard to access inputs in time and to find reliable market for maize.

5.2 Trends in Marketing and Pricing Policy

During the Phase of state control (1980-1990) the major and only buyer of maize was the government through the National Agricultural Marketing Boards (NAMBoards) and government controlled cooperatives (Wold et al 1996). However, farmers in the study area cited a gradual involvement of Choma milling company²⁰ in buying of maize towards the end of the same period. The perceptions of farmers towards liberal policies are that market liberalization has reduced the access to reliable market for maize. The farmers attribute the loss of maize market to abolishment of government supported institutions that were providing market to farmers. One informant, Mr Macha, in an interview described the SAP phase (1991-2000) as “...a period in which a new culture less helpful to most small-scale farmers was introduced by the government in which we started selling our maize anywhere, anyhow and to anyone at any price. All the good organization of NAMBoards in maize marketing left by President Kaunda has been lost”



Photo 1: Mr. Macha a 79 years old man explaining to the researcher his experience with agricultural policy changes.

When probed further on impact of liberal policies on maize marketing, Mr. Macha further explained that there are no guaranteed buyers like the previous NAMBoards whom farmers had

²⁰ One of the private companies in the in Choma district where this study was done

confidence in because the price was known in advance and market was guaranteed. His sentiments were shared by almost all informants interviewed. Notwithstanding loss of guaranteed markets, the common buyers, during the SAP phase, as identified by farmers are Food Reserve Agency (FRA), Jembo secondary school, CUSA, Dwintch company and individuals who are usually called ‘street buyers’ (because these individuals often came and moved around the village buying maize in small quantities). Farmers perceive that there has not been a change in the profile of buyers of maize during the PRSP phase. However, most of the farmers share the view that there has been an increase in the number of small-scale private buyers of maize after market liberalization.

The general view of farmers regarding changes in maize pricing is that the prices during the phase of state control were, stable, predictable and guaranteed by the government. However, after market liberalization, maize prices are fluctuating and very low as compared to high prices of inputs. Furthermore, farmers perceive that liberal policies have led to a shift from use of cash in buying maize to an increase in exchanging maize for material such as cloths, salt, soap, kitchen utensils and cooking oil. The farmers perceive the exchange of maize for materials as exploitative on their side. However, they are forced to exchange because there are no reliable buyers for maize so that they can get income to buy other goods at the time they need these goods. Moreover, the general view from farmers was that though the number of small-scale buyers has increased most of these prefer to use materials than money because they make a lot of profit. Above all the confidence that farmers have in the maize buyers has declined due to an increase in cheating on the side of private buyers. A widow, 68 years of age, had this to say over the deteriorating environment:

Box 2: Deteriorating maize marketing environment

It was very good during Kaunda's period when we used to sell our maize using weight scales because it was difficult to be cheated. But now I have even forgotten how a scale works because the current buyers are using larger containers from time to time and there is no control or agreed standard. In the recent past we have seen emergence of even bigger containers, (more than 20 liters) being used yet they don't change the price for maize.

In a group discussion, much worse cases were reported in which some unscrupulous traders got a lot of maize in the region by giving farmers 50% of the amount upon collection of the commodity but completely disappeared thereafter. This also happens for the credit and inputs in which unscrupulous persons and companies collect down payments from farmers for credit inputs but never deliver the inputs at all.

Liberal policies from 1991 brought about a change from state controlled pan-territorial price fixation to price determination by market forces (McEwan 2003). Immediate impact of liberal policies in Zambia was increase in fertilizer and maize seed while the maize prices have relatively remained low. The liberal policies have resulted in maize price fluctuations that farmers have not been exposed to. Information is very important for a liberal market to thrive (Williamson 2000, Gabre-Madhin 1999). Due to lack of information in rural areas most farmers do not know exactly the prevailing market prices for their produce. Therefore, the bargaining power for a better price is low on the side of small-scale farmers. Consequently, farmers end up being vulnerable to being cheated on the price and creates constrain on farmers' income which is a determinant for economic access to food (Maxwell 1995, Sen 1981).

The invisible market forces do not always bring out the promised benefits of economic efficiency as is the case for farmers in this study (Stiglitz 2004a, Fafchamps et al. 2003). In this case, lack of standards and a form of regulation of actors in the market system has led to an increase in buyers cheating and swindling small-scale farmers of their resources. As a result farmers feel that the statist policies are appropriate policies because of government institutions and agencies such as

NAMBoards that provided reliable market and agricultural support systems at their door steps. Liberalization of markets in Zambia was expected to increase private sector participation and an increase in crop prices that could have been an incentive for farmers to produce more (GRZ 2001). It was expected that farmers' income would increase as they market more of their produce (Wold et al. 1998, Wold et al. 1997). However, the involvement of private sector in taking up the government roles in rural areas has not been as fast as expected in Zambia. Lack of investment in marketing infrastructure makes the small-scale farmers feel the gap left by government's withdrawal. Poor road infrastructure, policy uncertainties and lack of incentives for private sector to provided agricultural services to remote rural area are among the reasons that account for the slow involvement of private sector in provision of agricultural services to rural communities (MACO et al.2003, Harvard and Hamungoma 1996).

5.3 Credit and Input Policy

Farmers described the period before SAP phase as a period with years of plenty food due to easy access to credit and inputs as well as early delivery of fertilizer and seed. The farmers associated the easy access to credit and inputs, during the pre-SAP period (1980-1990), to the government good infrastructure such as deports in villages and operation of NAMBoards and government supported financial institutions such as Lima bank. The general perceptions of farmers in relation to policy changes in credit and input supply are that there has been an increase in prices for both maize seed and fertilizer and a reduction in the access to credit and inputs due to removal of subsidies. Other studies done in some part of Southern Zambia and Northern Zambia also show a reduction in access of credit and inputs to small-scale farmers (Njobvu 2004, Kokwe 1997, Tviland 1996). During the SAP phase, the government got involved and has continued to be involved through the Food Reserve Agency, in the supply of inputs and credit to small-scale farmers through farmers' primary cooperatives and associations.

There have been equally changes in the quantity of inputs given on credit to small-scale farmers. Before 1991 it was possible for small-scale farmers to get not only fertilizer and seed but also loans for a number of farm inputs such as cattle, plough, harrow, planter and furrower. Nowadays, access to credit to small-scale farmers is mostly in relation to fertilizer and maize seed. Moreover, the quantities of fertilizer and maize seed that farmers could get were not limited

before 1991. Farmers perceive the supply of credit and inputs as worsening since liberalization policies. During the PRSP phase, inputs and credit has become limited to fertilizer and seed only with quantities accessible gradually reducing to an official limitation enough for one hectare only per farmer during the 2005/2006 season. Farmers further explained that the manner of repayment has also been changing since onset of liberal policies. In 1980-1990 farmers reported that they used to pay after their harvest and mostly the buyer could deduct their loan whenever they sold their maize. After 1991 a new system of down payments was introduced in which farmers were required to pay a given amount in order to be eligible to getting credit. The informants explained that the share required to be paid in advance has been gradually increasing and conditions becoming very difficulty to meet. This has resulted in the need for farmers to fully pay their share before they could qualify for getting inputs in the 50% government subsidized fertilizer program as of 2005/2006 farming season. The other stringent condition cited was the exclusion of farmers who wanted inputs for less than one hectare.

With regard to the timely supply of inputs, farmers strongly complained that the trend from 1991 has never been stable and good. The major problems cited were late delivery of inputs, sometimes wrong fertilizer being delivered and sometimes it is so late that it is delivered during the next growing season. Though the situation is still bad, farmers reported a slight improvement in the delivery of inputs during 2001 to 2005.

5.4 Extension Policy

Before 1991 extension services to farmers were mainly provided by the government using a training and visit approach and technology package of Lima program. During this period there was a lot of support given to farmers not only in crops but also livestock. In interviews with farmers it was found out that both extension workers and veterinary workers used to visit them very often before 1991 and the village was running a communal dip tank for cattle such that there were few problems with regards to farming. Structural adjustment programs fully adopted in 1991 saw a massive reduction of extension workers and extension services provision to small-scale farmers. The early 1990s were described by informants as years in which every farmer was using his or her own initiative to solve crop and livestock problems as there was virtually low access to extension services. Late 1990s were characterized by an increase in the provision of

extension services through private institutions (GTZ, World Vision International, Program Against Malnutrition, and Zest) in their efforts to address food insecurity. These have been working in close collaboration with extension camp officers shifting the approach from training and visit of 1980s to participatory extension provision with emphasis on conservation farming technologies. Though some of these private institutions have continued to work with government, farmers complained that there is lack of follow up and new organization keep on coming as others are ending their work. Some private initiative on a community radio station, Radio Chikuni, has been frequently featuring farmers sharing their farming experiences and lessons on both crops and livestock in local a language. This radio station is cited as one of the current major sources of new knowledge for farmers.

5.5 Causes of Food Insecurity

The perceptions of small-scale farmers regarding causes of household food insecurity there are several causes of household food security that have a network of interconnections to changes in agricultural policies. Nonetheless, farmers perceive major causes of household food insecurity as changes in agricultural policies, drought, livestock morbidity and HIV/AIDS. The perceptions of farmers regarding causes of food insecurity are given in the flow diagram below.

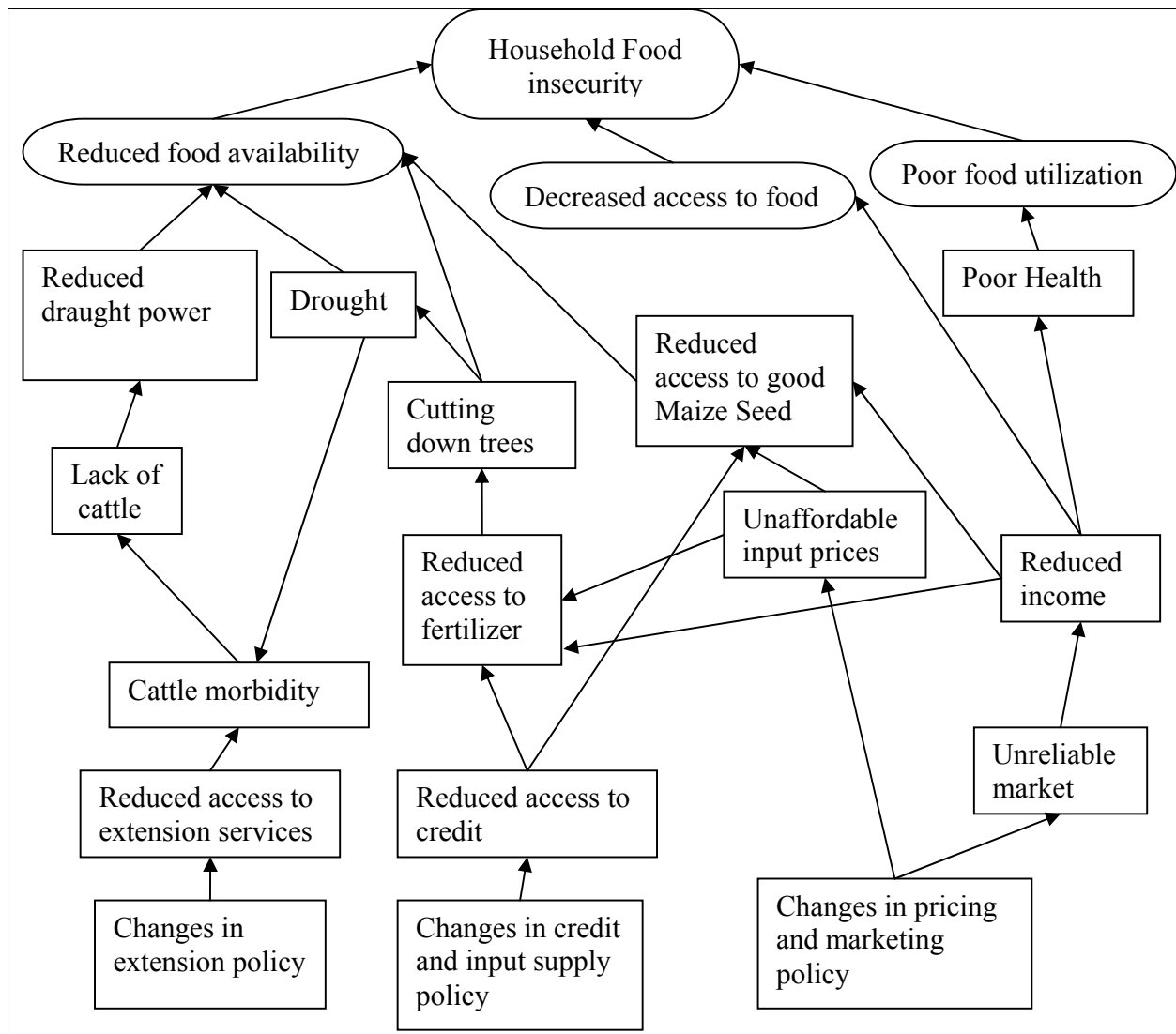


Figure 6: Flow chart for causes of household food insecurity as perceived by farmers.

There are several causes of food insecurity. These factors range from adverse effect of population growth, economic changes, government policies, low income levels, poor health conditions, gender inequalities, environmental degradation, drought, natural disasters, civil strife, terrorism, corruption and inequalities in resource ownership contributes to the existence food insecurity (FAO 1996, Stringer 2001). Such factors pose a constraint on food availability and access to food and food utilization thereby causing food insecurity. However, causes of food insecurity given by both FAO and Stringer are too general and do not show the complex interaction of some of these factors at a household level. Failure to understand the root causes of food insecurity has often led to interventions that address symptoms of food insecurity rather than the root causes

(Stringer 2002, Maxwell and Frankenberger 1992). This study adds insight to the complex relationship of agricultural policy changes and other related factors that cause food insecurity at a household level (Figure 6 above). Among all the main causes of food insecurity, the farmers perceive policy changes as the most influential factor because all other causal factors relate either directly or indirectly to marketing and pricing policy, credit and input policy and extension policy.

5.5.1 Drought: An agricultural policy related shock

The study site is located in a medium to low drought risk agro-ecological zone (Figure 3), it would be appropriate to classify it a medium to high drought risk area according to the experiences of the farmers. The perception of the small-farmers regarding the rainfall pattern during the past 25 years is that there has been a net increase in the frequency of erratic rainfall and drought. The most intense drought experience was during the seasons 1991/2, 1994/5 and 2001/02 and the general view among farmers is that the frequency of low rainfalls or partial droughts has increased since 1991 attributing to a net decreasing trend in water availability (GRZ 2004b, FAO 2005).

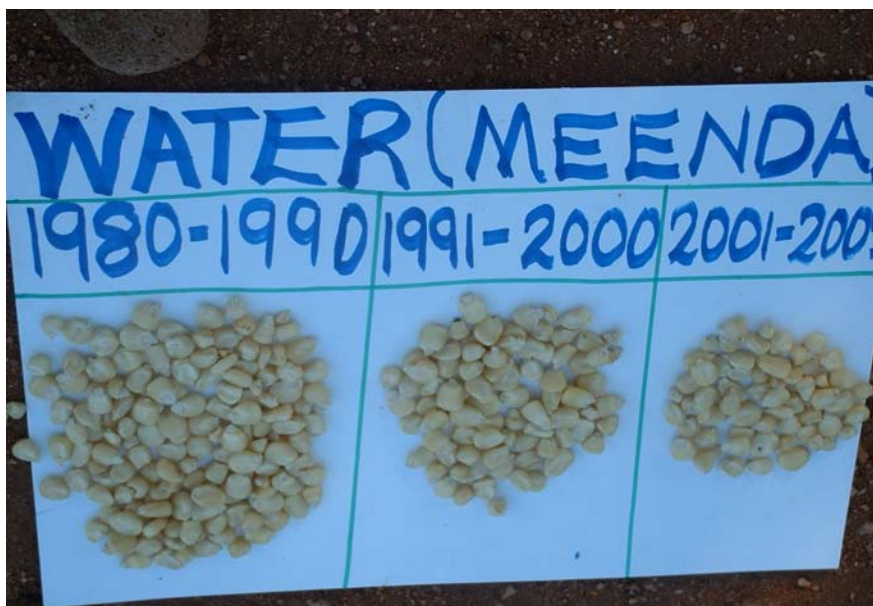


Photo 2: Trends in water availability.

Note: The number of Maize seeds in photo 2 denotes the degree of water availability and more seeds reflect a greater degree of availability.

The drought and poor rain pattern that have been experienced in the area has contributed to the declining yield for most of the food crops thereby reducing household food availability. Drought also accounts for cattle morbidity and death as the livestock lose weight, become weak and vulnerable to diseases due to insufficient pasture and water. Such a health state for cattle makes it not very fit as draught power. Therefore, the pace of ploughing and weeding is slowed down by the weak animals and it decreases the crop production especially during years with short rain season. Moreover, due to loss of weight and poor condition of cattle (effects of drought), such animals fetch low prices when sold or exchanged for less food than what it would have been if the animal was in health condition.

Farmers perceive that cutting down trees results not only to desertification, a view also shared by Wangari (2004), but it is already causing food insecurity by reducing the availability of food products from the forests that act as important buffers in times of crop failure. Therefore, livelihoods from forestry related products (Honey, fruits, thatching grass and carpentry) are at the verge of collapsing in the long run, a condition that would deepen the food insecurity situation. Due to the declining water availability (Photo 2 above), livelihood activities such as gardening²¹ (mostly run by women) have been hampered. This has deprived households of the much needed income and relish²². Furthermore, the situation has increased women's time and labor for fetching water. Women spend long hours queuing for water every morning at a borehole within the village or move long distances to the neighboring villages to fetch water. This deprives them of time to engage in other economic activities such as small businesses, piece work and handcrafts.

How does agricultural policy change relate to drought and its stream of effects on household food security? Though changes in global climate account for micro climatic variations and erratic poor rainfall pattern (Stringer 2001), what is central among farmers in the study area as a cause of drought is cutting down of trees mainly in search of fertile virgin soil that can be used without application of chemical fertilizer. The farmers' view agrees with the thinking of the Green Belt

²¹ The vegetable gardens are mostly controlled by women and depend on water supply from, Hakanyona, a stream that has often gone dry during the dry season for the past decade.

²² It is mostly the responsibility of women to look for relish while the men are mostly responsible for maize meal

Movement (Wangari 2004). Unaffordable input prices due to changes in pricing and marketing policy, have forced households to engage in erosive practices such as be cutting down trees as they negotiate through their livelihoods in fighting household food insecurity.

5.5.2 Shocks in Extension Policy and Livestock Morbidity

The sudden withdrawal of public extension support after 1991 has reduced access to extension services for small-scale farmers in both crop and animal husbandry (Njobvu 2004, Harvard and Mungoma 1996). Economic reforms and liberal policies have led to contraction of public workforce. In the study area, there is only one extension officer (who is also an acting block supervisor) responsible for approximately 280 households. However, in an interview she reported that during 1980-1990 the number of households that she was responsible for was not exceeding 80 but the number has swollen up to 120 during SAP period and it is as high as 280 during the PRSP period. This is mainly due to the reduction in the number of public workers and increase in the population. Therefore there has been a sharp decline in access to extension service among small-scale farmers.

The underlying assumption of liberal economic reforms was that the withdrawal of the government from provision of extension support to farmers would create room for private sector involvement (Wold et al. 1987). Nonetheless there has been low private sector involvement in the provision of extension services and the vacuum left by the government is felt among small sale farmers especially in the livestock sector.

Moreover, due to a declining net household income, compounded by sharp rise in food prices and increase in fees for education and medical services (results of policy changes), the small-scale farmers cannot afford the few private veterinary services available. This has increased the rate of cattle morbidity and death, a situation that has grossly eroded the most important source of draught power and manure among the small-scale farming communities.

Box 3: A small-scale farmer describing cattle morbidity and food security

During Kaunda's time (before liberal policies), the veterinary officers used to come to vaccinate to our cattle, we used to dip our animals regularly at a local communal dip tank at a minimum fee and were very proud of hundreds of herds of healthy cattle. But I don't know where this deadly disease Denkete (corridor disease) came from and swept most of our wealth. Also from 1991 when governments changed, life also changed. We never knew what relief food meant, but now it is sad that we are being fed by external people and have even eaten yellow maize that I never thought I would. The veterinary officers disappeared, no more dipping of cattle and no longer regular vaccinations for the cattle. Our draught power is gone, so what do we use to cultivate and weed our crops? The end result is persistent widespread of food insecurity in the village.

Essentially, it is imperative at this point to note that policy changes in public extension support have contributed to reduction in access to extension services, continued death of livestock, decreased income and poor yields. All these factors lead to reduction in food availability and economic access to food.

There has been change in extension messages from Lima program during the state-led agricultural development approach to conservation farming practices during the PRSP phase. Conservation farming practice, potholing, is the main technology that is being promoted among small-scale farmers at the moment in the study area. The general perceptions of farmers towards potholing are that the technology is not appropriate for their environment that has soil with a lot of stones. They also complained of the technology being too labor demanding such that none of the households is still practicing potholing after it was introduced in the area.

Box 4: Farmer' experience with potholing.

Question: why did you accept potholing in the first place?

We accepted potholing because it was the only easiest means to get access to relief food. The condition was that each household was required to dig 4000 holes in a one hector plot. All households involved were supposed to work on one plot at a time. This was a bit of a problem because some people never went to work for others when they were supposed to. However, we adopted potholing so as to get fertilizer, maize seed and relief food.

What good did you find in this practice?

Potholing does not work!! Some of us were made worse off because we did not harvest anything from the potholed plots. Some of the people with cattle after getting the maize seed and relief food cultivated the fields using draught power and covered the basins. Such people had good harvest. But for some of us without cattle or means to hire cattle, we don't have enough livestock manure in the first place to put in the holes.

Incentives of relief food, maize seed and fertilizer are used to enhance the adoption rate of conservation farming. Conservation Farming Unit and International Food Policy Research Institute report significant improvement in household food security among small-scale farmers who are using conservation farming practices (Tembo and Haggblade 2003). However, this is not the case in is study because farmers feel that potholing is not appropriate for their needs and environment.

5.5.3. Health and shocks in Marketing and Pricing policy

Farmers view liberal policies as having led to an emergency of an unreliable market that posses a constraint on income flow from crop production. Lack of a secured market for maize, price fluctuations and lack of information has made farmers to lose out their income from their farm produce. Reduction in household net income is cited by farmers as one of the reasons for a

declining health status due to reduced access to good medical services in an environment with HIV/AIDS. Reduction in access to proper medical care makes even curable diseases such as Malaria continue being a menace once among farmers. World Food Summit (1996) and von Braun et al (1998) in Weingärtner (2005) observe that improved health and nutrition leads to higher physical productivity. Therefore, the agricultural productivity is lowered as the human labor is weakened and ripped off by diseases such as HIV/AIDS and Malaria. For the poor and extremely resource poor households, the situation is worse because once one member gets sick of Malaria, then all household members may get the illness one after the other and sometimes all at once. This is because of lack of sufficient money for prevention and good immediate medication. The resulting poor health condition inhibits physiological utilization of food for an active life. In most cases, the household expenditure pattern changes with a reduction on food expenditure and increase expenditure on caring for the sick. Hence, in addressing issues of food security it is imperative to address root causes that are enshrined in policy changes that unfortunately have often come as shocks to small-scale farmers in Zambia.

5.5.4. Shocks in Credit and Input supply policy

Farmers perceived shocks in the input and credit supply as abolishment of NAMBoards, Lima bank and the collapse of cooperatives during the SAP period. Farmers generally perceive liberal policies as inappropriate because they have led to contraction of inputs and credit, soaring of fertilizer and seed prices and emergency of some unscrupulous businessmen. Other studies have equally shown that farmers are ripped off farmers of their money through down payment on fraudulent credit schemes by roguish dealers who sometimes sold expired seeds and fertilizer (Saasa 2003, MACO et al. 2002, Kokwe 1997, Tviland 1996). Kokwe (1997) further observed that due to ill implementation of restructuring exercise and liberal policies, the situation was worsened by incoherent last minute decision from ministerial headquarters to agricultural provincial offices that scampered in districts trying to implement new regulations on credit and input within few weeks. Hence, the changes in the credit and input supply policy are not being well communicated to the farmers which put farmers in dilemma. Ultimately the radical shift to adoption of liberal policies in the credit and input supply system to small-scale farmers resulted in reduced access to credit, fertilizer and good quality seed.

With the rationale of reducing rural poverty, the government in the PRSP phase has once more emerged as an active actor in credit and input supply to small-scale farmers through the FRA and the fertilizer and seed support program (GRZ 2004b, GRZ 2002). However, the conditions to access the inputs under such poverty reduction initiatives are perceived as unrealistic by farmers. Box 4 below gives what an informant had to say in the focus group discussion with regards to the prevailing government led credit and input supply policy.

Box 5: Perceptions of a farmer towards agricultural input support for poverty reduction.

Currently, we cannot say that we are getting any loan from the government because we are forced to pay in advance though sometimes we don't even get the right amount of bags of fertilizer and seed paid for. However, we are very grateful to the government for the 50% subsidy for maize seed and eight bags of fertilizer under the fertilizer support program. But what we are crying for is to allow us to pay our 50% after harvest because we cannot afford raising 50,000 kwacha for membership in the primary cooperatives, 150,000 kwacha for shares and 571,000 kwacha²³ prepayment for the inputs. Meanwhile, we don't have enough to eat and even hoping to receive relief food, and really where does the government think some of us who do not even own a single cow will get all this money? Furthermore, they don't accept payment for any less than 8 bags fertilizer and seed for one hectare. At least if the government could allow us to get even 2 fertilizer bags, then a lot of us could afford the 50% prepayment after selling some pigs and goats.

It is very ironical for a government policy program (agricultural input support program) intended to improve food security situation and poverty reduction, to be seen as a means for marginalizing the targeted primary beneficiaries (resource poor and extremely resource poor small-scale farmers). The farmers welcomed the initiative for subsidizing but they think the conditions set for one to benefit from these initiatives cannot be met by most of them due to lack of money.

²³The total amount needed in United States dollars approximated to \$215 at an exchange rate of 1 dollar to 3500 kwacha, prevailing at time of conducting this research).

5.6 Effect of policy changes on household agricultural production

The general perception of small-scale farmers regarding impact of policy changes on agricultural production is that there has been a decline in the production.

5.6.1 Crop production trends in average

Changes over time Crops	1980-1990	1991-2000	2001-2005
Beans			
Coton			
Vegetables			
Groundnuts			
Maize			
Sorghum			
Sunflower			
Sweet potatoes			

Figure 7: Historic Matrix for crop production. Note: Dots represent maize seeds reflect extent of production i.e. the more the seeds, the higher crop of production.

There has been a decline in crop production generally for most crops due to factors as drought, policy changes in exception of cotton due to input supply sufficiency. Reasons for such changes in production are drought, less access to credit and input, loss of draught power and HIV/AIDS. An increase in cotton production was attributed to easy access to inputs through reliable private companies and that also guarantee market to farmers and the price is known in advance. The private companies come to collect cotton in the village from a common place where farmers have to deliver. This reduces transport costs on the side of farmers.

5.6.2 Livestock production trends

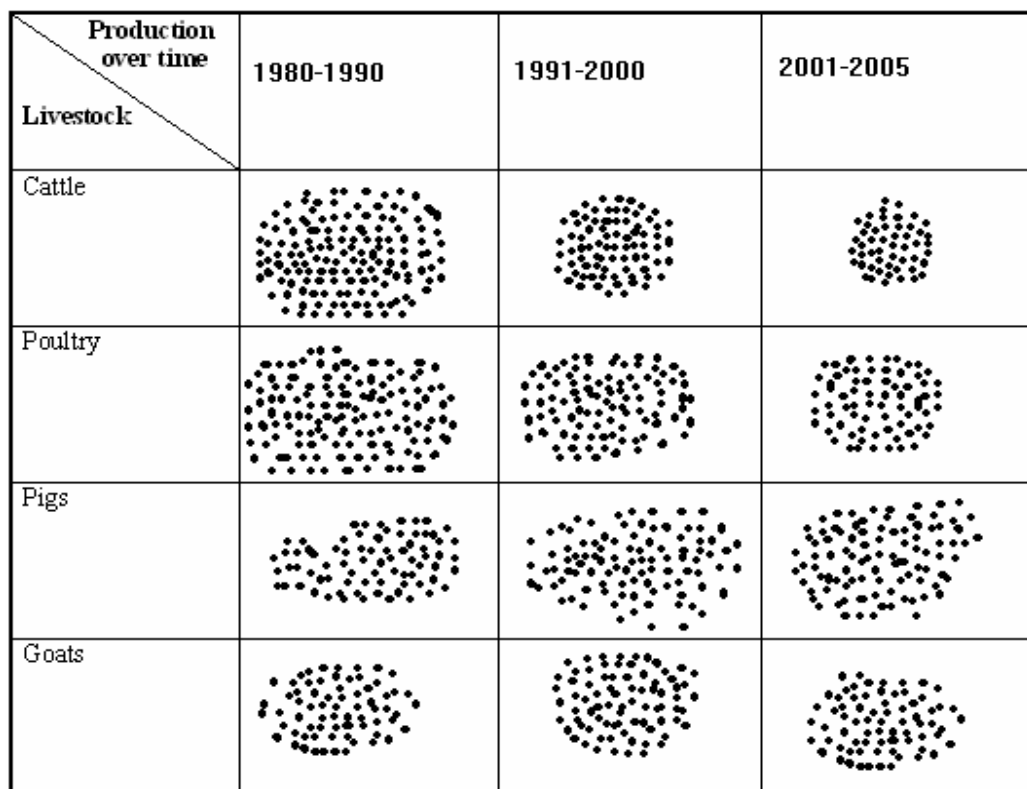


Figure 8: Historic matrix for livestock production. Note: Dots represent maize seeds reflecting the number of livestock raised i.e. the more the seeds, the higher the number of livestock raised.

From the figure above, there has been a decrease (with different extents) in numbers of cattle, poultry and goats due to diseases and lack of veterinary support. However, Pigs and goats are less affected by diseases. Due to a high number of litters produced at each time and the good

market price for pigs several households have gone into piggery. Farmers are able to access reliable urban markets (like Lusaka) for pigs due to a secure marketing infrastructure.

A private agency has constructed a common marketing place where pigs are sold in Lusaka and through bulk selling (in order to reduce transaction costs), small-scale farmers are accessing the urban pig market and benefiting from the pig production.

5.7. Coping strategies and capacity

The major determinant of coping strategies and extent to which households are resilient to shocks in agricultural policy changes among small-scale farmers, is the household asset status (Ellis 2003, Devereux 2001). Due to varying degree of wealth status among small-scale farmers there are different coping behaviors adopted by households of different poverty levels. However, some of the coping strategies are common to all poverty categories though the extent to which such strategies enable a household to remain afloat heavily depend on the assets at the disposal of a particular household. Common coping strategies are gathering of wild root crops and fruits, reduction in the size and number of meals. The resource poor mostly depend on wild food collection, hire out their labor in exchange of food and some send household members to stay with other relatives. Above all, the general tendency is that the lower the household asset status, the more likely the household would engage in erosive responses such as sell of productive assets such as farm implements. This is because of few outlets available for them as their coping capacity is constrained with poor status of resource. What is typical from this study on response of households to policy changes is a major shift in agriculture orientation particularly the main reasons for growing particular crops and raising particular livestock.

5.7.1 Changes in household agriculture orientation

There have been changes in the use or purpose for growing various crops grown and raising different types of livestock over the three periods under consideration. This change is one way in which farmers are coping with changes in agricultural policies. The table below shows in average changes in major purposes for growing particular crops as a coping strategy to changes in agricultural policies.

Table 2: Changes in the main purpose for growing crops and raising livestock

Crops/Livestock	Main purpose(s) over time		
	1980-1990	1991-2000	2001-2005
Maize	Household consumption and selling	More of household consumption than selling	Household consumption
Beans	Household consumption	Household consumption	Household consumption
Groundnuts	Household consumption and selling	More of household consumption than selling	More of household consumption and selling
Sunflower	Selling	Selling and household consumption	More of household consumption than selling
Sweet potatoes	Household consumption	Household consumption	Household consumption
Cassava	Household consumption	Household consumption	Household consumption
Cattle	Draught power, consumption and Selling	More of drought power than selling	Draught power
Goats	More of household consumption than selling	More of selling than household consumption	Selling
Pigs	More of household consumption than selling	More of selling than household consumption	More of selling than household consumption
Chicken and Guinea fowl	Household consumption	Household consumption and selling	More of selling than household consumption
Pigeons	Household consumption	Household consumption	Household consumption

5.7.1.1 Changes in major purpose for growing crops

From the 73 heads of households interviewed, number of households growing maize for the purpose of consumption and sale has declined from 55 in 1980-1990 to 22 in 2001-2005. Hence, 51 households out of 73 are growing maize for subsistence only. The majority of these households are from the resource poor and extremely resource poor categories. The driving forces for such a shift are expensive fertilizers, expensive seed, and poor access to credit, persistent livestock diseases and unreliable maize market. The late delivery of inputs, delivery of less quantity of inputs than expected and sometimes wrong inputs given further foster the shift towards maize production for subsistence. Above all, the poor rain pattern over the last 25 years has contributed towards production of maize for consumption only. Farmers perceive the shift towards cotton growing as a response to the constraints imposed by policy changes in relation to maize production. There has been an increase by 18 households²⁴ growing cotton after liberalization of markets in the study area. The reasons for the shift from maize to cotton production are poor market for maize, readily available market for cotton, cheap and easily accessible cotton seed and chemicals, price is known before planting, farmers get full payment of their produce at once and there is good transport arrangement since the buyers come to the village to collect to commodity. Consequently, this also accounts for some households growing maize for subsistence only while others don't grow maize but buy maize from income from cotton. Major constraints preventing other households from cotton growing are: lack of draught power, lack of adequate and active human labor, lack of resources to hire labor and intra-household gender relations. Men have always been associated with cash crops. Two decades ago, maize was in the domain of men but it is increasingly becoming under the domain of women. This is because of the loss of market and less access to inputs for maize. The general perception of women is that the emphasis on cotton production has increased food insecurity. The first reason given for such a situation is failure for households to keep money from cotton to enable them buy maize from time to time.

²⁴ Out of the 73 households, 25 have were growing cotton since 1980s and lately 18 households have started growing cotton.

Due to other financial demands (such as sickness, funerals) the money is spend before the next harvest season. The other reason cited by farmers, is fears that maize can be attacked by pests if they bought in bulk at once when they get the income from cotton. As a result, most women do not agree to the notion of growing cotton and latter buy maize from cotton income. This situation has led to an increase in the extent to which women are growing maize for household consumption. This is because women are more actively involved in the daily search for food whenever there is a shortage of food (Quisumbing 2004, Moser 1989).

In the case of sunflower, there has been a decrease from 52 households growing the crop for selling in the period 1980-1990 to 21 households at present growing the crop more for household consumption than selling. Most of these households grow the crop in small quantities and use it as a source of cooking oil and feed for chicken. Though there are no changes in the main purpose for growing beans, groundnuts, sweet potatoes and cassava, there has been a slight general increase from 44 households to 50 households growing beans, while those growing groundnuts have remained fairly constant (65 of 73 households interviewed) and a fairly constant number of 53 households growing sweet potatoes since 1980s. Though there is an equal loss of market structures like NAMBoards that could buy groundnuts, the production has remained almost the same (Figure 7 above) because of the central role it plays as relish, its use in a diverse food recipes and largely being under the control of women. However, due to high value when exchanged with maize and good price if sold (access to markets is still a constraint) some men are entering into the growing of groundnuts so as to tap the market. Groundnut crop is a major source of good income for women, and the crop has a central role meeting every day household food needs. Above all, groundnuts a high value when exchanged with maize that makes it very important for food security purposes. Therefore, women perceive that their negotiation power for household resource allocation (mostly in terms of labor and time) towards groundnuts has relatively improved. In consequence, most men give help in the cultivation while a few assist in harvesting but weeding of groundnut is mostly done by women and girls.

Policy changes have not impacted on the growing of cassava and sorghum. This is because growing of these crops in this area has not been strongly associated with market policies, formal credit and input supply system (Wood 1990). In the period 1980-1990, 14 households reported growing cassava and the number of households growing cassava has increased just by two since that period. Increasing food insecurity was cited as the reason for adopting cassava by the two households.

However factors inhibiting adoption of cassava in the study area include termites attacking the crop, lack of seed, diseases, lack of knowledge of how to grow the crop and cultural aspects. Cassava is perceived as a non- traditional crop among the Tonga people in the study area. As a result the growing of cassava is seen as an alien practice that most farmers are not willing to engage in as it has little connection to their past agricultural way of life.

The main purpose for growing sorghum, domestic consumption, has not been affected by policy changes but the number of households growing sorghum has increased from seven during the phase of state control (1980-1990) to 13 households during the PRSP phase (2001-2005). The driving force cited by farmers for adopting sorghum by the six households is the increasing food insecurity. However, factors preventing the growing of sorghum include lack of draught power, low opportunities for selling, too many pests (birds) and too much time demanded in chasing away birds from the fields.

5.7.1.2 Changes in major purposes for raising livestock

The trend in the main purposes for keeping various Livestock is quite different from that observed for crops. Instead of a shift towards subsistence, there has been a general shift towards raising livestock for the purposes of income generation. This is due to various constraints associated with crop production as discussed above. Additionally, the market for livestock is relatively better than for most crops such that the farmers have more power in bargaining for good prices for their livestock. Furthermore, buyers often come to the village to buy which reduces transaction costs for the farmers. Notwithstanding this

fact, bulk selling is also done by farmers in which they take their livestock to urban areas especially Lusaka. Similarly, the practice of selling as a group has proven to be advantages in reducing transaction costs. Furthermore, livestock is a flexible media of exchange for many commodities such as school fees, clothing, food, groceries and labor. Because of these reasons in addition to locally available market especially from the nearest boarding school and health center, livestock has proven to be the most efficient means of meeting immediate demands for money. However, there are some constraints that farmers are facing as they raise livestock. Cattle are constantly being attacked and some die of corridor disease (*Denkete*). This has deprived most households of milk, draught power, cultural pride and source of income especially for men since they are often in control of big livestock. Consequently, there has been a remarkable change from the multi dimensional purposes of cattle (Payment of bride price, source of income, draught power, household consumption, and meat during celebrations and funerals) to a confined purpose of draught power. The periodic outbreaks of diseases was generally cited as a major constraint in livestock rising though the extent to which diseases affect different types of livestock differs.

5.7.2 Changes in household Income profile

Categories of sources of household income are crops, livestock, and remittances²⁵ and, off-farm and non farm activities. Due to the general decline in agricultural production and access to reliable market, farmers feel that their household income has reduced since liberal policies started.

Off-farm activities mainly included hiring out labor (locally referred to as piece work) in weeding and harvesting of cotton, maize and groundnuts. Non-farm income sources were metal-work for black smiths, hiring labor in cutting thatching grass mostly for women, brick laying, making traditional baskets (*zisuwo* in local language), sale of wood fibres, building, sale of thatch grass, thatching, carpentry, wood crafts (making yokes, stools and cooking utensils), wild fruits and mushrooms, salary employment at a local clinic and

²⁵ Remittances refer to income received from friends , relatives and pension

boarding secondary school, retail shops and sale of dried fish got from lake Kariba (2 days walk by men).



Photo 3: showing a female domain non-farm income activity: An informant making a traditional basket while being interviewed.



Photo 4: showing a male domain non-farm income activity: a family of black smiths at work.

The changes in the extent to which each income source contribute to the overall household income is shown in a Historic matrix for household income in figure 9 below.

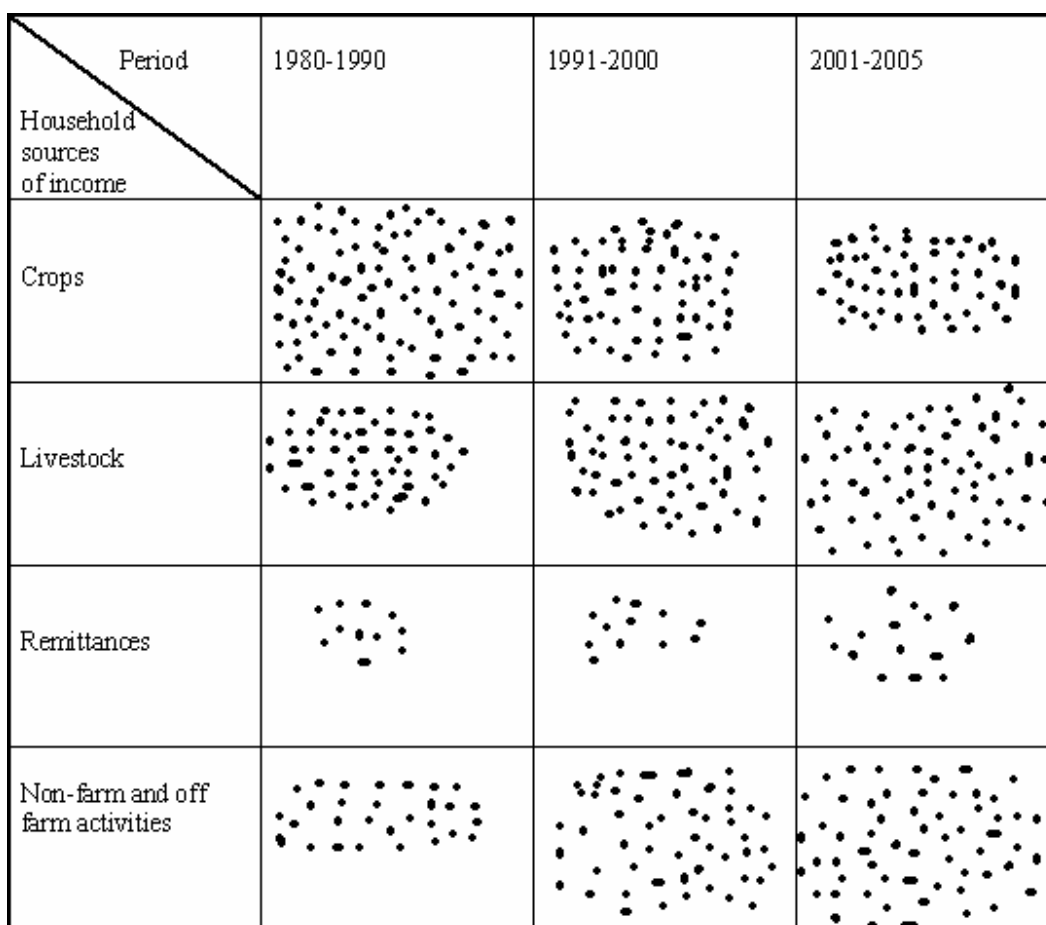


Figure 9: Historic matrix for household income.

Note: Dots represent maize seeds reflecting the extent to which various income sources have contributed to household income. More dots show a greater the extent of contribution to household income.

The decrease in income flow from crops is mainly due to shocks and constraints associated with maize production such as less access to credit and inputs and poor market system for maize. The observed increase in income flow from livestock is mainly from pigs and goats whose production has increased and market for these is quite easily accessible. Additionally, pigs and goats have proven to be quite resistant to diseases in the area. There has been a slight increase in the remittances particularly as support for the aged. The extent to which remittances and aid have contributed to household income has been lowest among income sources for all the periods under consideration. Nonetheless,

the slight increase is attributed to an increase in the female headed households receiving remittances especially for the support of the aged. The remittances come from relatives working in urban areas, a few working at the nearest boarding school and health center, and also from relatives within the village who could have sold some livestock. Generally, due to the declining income flow from crops, low access to credit and inputs, cattle morbidity and poor rain pattern there has been an increase in the non-farm and off-farm sources of income over the last 25 years.

A comparative analysis between women headed households and man headed households, shows a higher extent of income contribution from crops for male headed households than female headed households since 1980. This is largely due to men's better access to inputs and control of household labor. However after 1991, there has been a slight increase in extent of household income contribution from crops for women headed households, because of the increasing market for groundnuts and its critical role in food security. In the case of livestock there has been an increase and quite stable higher extent of income contribution from livestock for female headed households than male headed households since 1991. This change is basically due to an increase in keeping of pigs, goats and chicken for sale among women while the cattle population largely under male domain has declined mainly due to corridor disease.

There has been a sharp increase in the extent of income contribution from off-farm and non-farm activities since 1991. The income contribution from non-farm and off-farm activities for male headed households has been higher than for female headed households for the first two periods. Conversely, the extent of income contribution of non-farm and off-farm activities has been increasing among female headed households since 1991 while it has slightly reduced among male headed households in the past five years. Consequently, the extent of income flow from off-farm and non-farm activities is higher for female headed households than for male headed households for the latest period PRSP phase (2001-2005). This is attributed to a high degree of women involvement in hiring out their labor in weeding and harvesting, cutting of grass for thatching, and small

but regular business of baking, gathering and selling of forest food such as fruits and mushrooms and gardening.

5.8 Key outcomes

5.8.1 Local meaning of household food security

Men and women had different perceptions regarding the meaning of household food security.

Table 3: Gender perceptions of food security

Men's understanding of food security	Women's understanding of food security
Having enough food, having money to buy food, affording three meals per day and having enough wealth (livestock especially cattle) for draught power.	Having enough food, when everyone especially children and men get satisfied each time food is served, having health foods, having a variety of food and nice foods for sickness prevention for children and each day remain with some food for the visitors.

There are similarities in aspects relating to supply and sufficiency, while a major difference in nutritional understanding of food security concept between men and women. Women included the need for diversity and health food. Additionally, women linked their understanding of food security to child care which indicates a closer link to their traditional role of cooking and child caring.

The operational definition for food security used in this study is adopted from the 1996 Rome declaration on food security in which food security implies having physical and economic access to sufficient, safe and nutritious food to meet dietary needs and food

preferences for an active and healthy life by all people at all times (FAO 1996). This definition corresponds to the perceptions of the farmers regarding the meaning of food security.

5.8.2 Trend in Household food security

Generally regarding the adoption of liberal policies and a market-led agricultural development approach, the general feeling among farmers is that there has been an increase in availability of food aid, frequency of drought, length of hunger period in a year and frequency of less than two main meals per day. All these factors suggest a shift towards household food insecurity as shown in indicators below.

Changes over time Food security indicator	1980-1990	1991-2000	2001-2005
Availability of food aid			
Availability of maize seed (commercial and own saving)			
Drought			
Dietary diversity			
Length of hunger period			
Less than 2 meals per day			
Sell of productive assets			
Wealth status			

Figure 10: Historic matrix for household food security showing extent of changes in food security indicators.

Note: Dots in figure 10 represent maize seeds reflecting the intensity or frequency of a particular food security indicator i.e. more dots show a high intensity or frequency.

The general view among small-scale farmers is that the liberal policies have not improved their household food security. This is because of limited access to inputs, poor market and prices for maize, loss of draught power and drought. Furthermore, after adoption and implementation of liberal policies during SAP, there has been an increase in the extent to which households sell productive assets in trying to cope with increase in food insecurity, increase in prices of goods and services caused by the removal of subsidies by the government. However, the extent of sale of these assets has decreased in the PRSP period. This decrease is mainly due to several households having few productive assets that they can sell. The decline in wealth status is attributed to an increased prevalence of livestock diseases, while a reduction in dietary diversity is a result of reduction in food availability from own production, less economic access to different kinds of food and a shift in the main purpose for various crops and livestock from consumption towards selling. Generally, farmers perceive the impact of agricultural policy changes as deterioration of household food security as shown in photo 3 below.

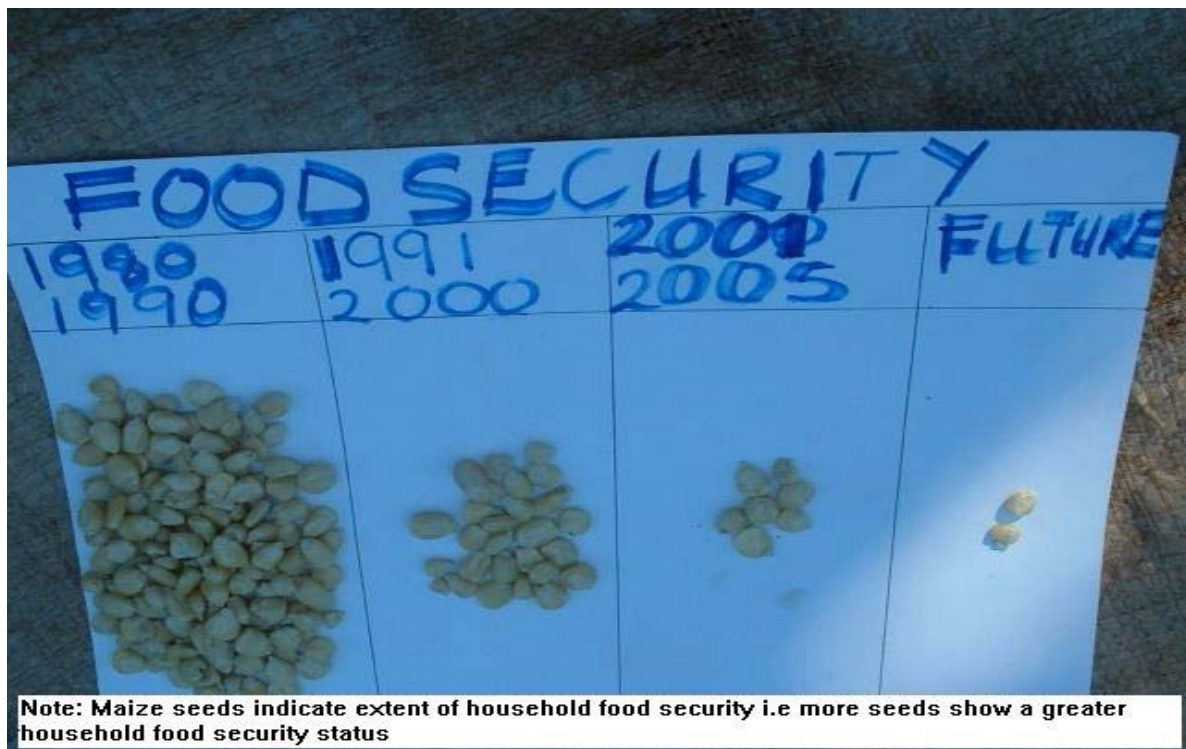


Photo 5: General trends in household food security as perceived by farmers

The change of policies from state controlled market system to market liberalization was expected to bring efficiency in the delivery of agricultural service to farmers, improve their access to markets, improve income of rural communities and improve household food security (Wold et al. 1998, GRZ 2002). Price distortions imposed by state interventions were expected to be corrected and lead to higher prices for crops like maize in Zambia (Wold et al 1997). However, liberal policies have led to decline in agricultural production that has reduced food availability. Decline in household income due to loss of reliable markets for farm produce presents a limitation in economic access of food by households. Liberal policies have led to increase in prices for goods and services. This increase equally limits the capacity for economic access to food due to an increase in the share of household expenditure on non-food items (Njobvu 2004). However, increase in food insecurity is compounded by other factors such as HIV/AIDS that is reducing human labor and also affect food utilization.

6. CONCLUSION

The purpose of this study was to link the agricultural policy changes at a macro level in the last 25 years to the experiences of small-scale farmers regarding household food security. The problem being addressed was the several agricultural policy changes aiming at improving agricultural production since 1980 yet food security in the country has kept on deteriorating. Hence, the objective of the study was to assess the perceptions of small-scale farmers regarding impact of agricultural policy changes on household food security since 1980 in Southern Zambia. The significance of the study was to generate knowledge that could be useful for policy makers, agricultural public workers, farmer organizations, non-governmental organizations, donors, bilateral and multi-lateral international financial institutions (IMF and World Bank) and the international community concerned with improving household food security among small-scale farmers in Southern Zambia. This study addressed the following three research questions:

- What kind of major policy changes have occurred in the agricultural sector with respect to extension services, maize marketing, credit and input supply?
- How have these policy changes affected small-scale farmers' agricultural production, income and household food security?
- What are the effects of agricultural policy changes on household food security in relation to gender?

Major agricultural policy changes have been identified under three main policy phases that have characterized the development of agriculture in Zambia. The first phase was dominated by state-control from 1980 to 1990. This was followed by a phase of Structural Adjustment Program (SAP) from 1991 to 2001 that has been replaced by the current phase of Poverty Reduction Strategy Paper (PRSP).

The phase dominated by state-control had two forms of policy environments: an excessive state-controlled policy environment from 1980 to 1983 and an economic transition policy environment from 1984 to 1990. A state-led agricultural development

model characterized the phase of state-control. A state-led extension system using training and visit approach was used and the message emphasized on maize growing by rational use of seed and chemical fertilizers through the Lima program (McEwan 2003, Haug 1981). In terms of marketing policy the government parastatal agencies, NAMBoards and Cooperatives were sole buyers of maize in the market. Similarly, these state agencies monopolized the supply of credit and inputs to farmers. The market environment was characterized by excessive price controls through state fixation of producer and consumer prices, pan-territorial pricing of agricultural inputs and maize. The government provided subsidies in the processes of production and marketing of maize through parastatal agencies. These policies were economically inefficient and unsustainable (Shawa and Johnson 1990, Wood 1990). The collapse of copper prices and raise in oil prices made it impossible for the government to continue with such policies without borrowing from IMF and World Bank. As a result, the Zambian government was pressurized by the multi-lateral financial lending institutions to adopt Structural Adjustment Program (SAP) as economic development packages to address the country's economic crisis. This led to policy changes and the economic transitional phase.

The period of economic transition from 1984 to 1990 was characterized by a halfhearted and unsustainable adoption of liberal policies (SAP). The government made attempts to shift towards a market-led agricultural development process by reducing the role of parastatal agencies in the supply of agricultural inputs, credit and marketing of maize. The government equally tried to reduce subsidies and freeing prices of agricultural inputs and maize. However, the increase in consumer prices especially for maize meal that resulted from these attempts to adopt liberal policies led to wide spread food riots in urban areas. This forced President Kaunda's UNIP government to abandon the Structural Adjustment Program in 1987 so as to secure political support from electorates. Hence, the period from 1987 to 1989 was characterized by more of the statist policies advocating for a state-led agricultural development than market-led agricultural development (Wold et al 1998).

However, the UNIP government, in 1990 to 1991 re-adopted liberal policies because it was realistically impossible for the government to provide and sustain subsidies to farmers in rural areas and consumers in urban areas (Saasa 2003). Nonetheless, liberal policies (SAP) even at this time were never fully implemented due to political interests in the elections (Saasa 2003). The 1991 general elections led to a change of governments and full phase of Structural Adjustment Program.

During the phase of Structural Adjustment Program from 1991-2001, President Chiluba and his Movement for Multi-party Democracy (MMD) government embarked on full implementation of liberal policies through structural adjustment programs. These liberal policies also called the Washington Consensus, advocated for privatization, market liberalization, and minimization of the role of government in economic activities (Kydd and Dorward 2001, GRZ 2001, Williamson 2000, Wold et al. 1998). This implied adoption of a market-led agricultural development model as opposed to a state-led agricultural development model as means for increasing agricultural production, household food security and economic growth (GRZ 2001, Kydd and Dorward 2001, Wold et al 1997). The main thrust of the 1991-2000 policies was “to liberalize the agricultural sector and promote private sector development and participation in the delivery of agricultural services” (GRZ, 2001:4). The thinking behind the liberal policies through SAPs was that market liberalization and privatization would lead to efficient allocation of resources by getting the prices right and promotion of investment in agriculture by the private sector (Stiglitz 2004a, Williamson 2000, Wold 1997, Shawa and Johnson 1990). Therefore, it was expected that a shift towards liberal policies would promote competition, correct prices that were distorted by state interventions, increase private investment and economic efficiency in the agricultural sector in Zambia (Kydd and Dorward 2001, Wold et al. 1997). It was further assumed that the liberal policies would lead to higher prices for farm produce especially crops which were often below the market price in Zambia (Wold et al. 1997, Wold et al. 1996). The incentive of higher prices and increased private sector involvement in the agricultural sector was expected to cause small-scale farmers to increase their production and market more of their produce. Consequently, increase in agricultural production would lead to employment creation,

increase in farmers' income and improvement in household food security (World Bank 2003, Irz et al 2001, Williamson 2000, Wold et al. 1998).

Therefore, major changes in the agricultural policy environment during the SAP phase were withdrawal of government from its involvement in marketing, provision of credit inputs, privatization of parastatal agencies, elimination of price controls and subsidies (GRZ 2001). In order to reduce government expenditure, the number of public extension workers was reduced while the extension message shifted from concentration on one crop, Maize and its Lima technological packages, to emphasis on crop diversification and promotion of conservation farming practices. However, poverty and food insecurity in Zambia has kept on increasing as farmers' access to extension services, markets, credit and inputs reduced. Additionally, poor road infrastructure to rural areas and slow private sector response contributed to the worsening agricultural production and deteriorating food security in the country. With an increasing global concern about poverty alleviation and the need for developing countries to map out strategies for poverty reduction, the SAP became replaced with Poverty Reduction Strategy Papers (PRSP). Hence, the current agricultural policies under president Mwanawasa's government are based on millennium development goals and PRSP.

The Phase of Poverty Reduction Strategy Papers, from 2001 to date, is characterized by government mainstreaming of poverty reduction into liberal economic policies. The Agricultural Commercialisation Program (ACP) is used as a means to achieve poverty reduction and economic growth among the small-scale farmers. The vision for the agricultural sector as articulated in the National Agricultural Policy (NAP) and ACP is "to promote development of an efficient, competitive and sustainable agricultural sector that ensures increased income and food security" (GRZ 2004a, GRZ 2001:20). The government recognizes food insecurity as a poverty problem and has instituted programs such as Food security pack program in 2001 and Agricultural input support program established in 2002/2003 targeting small-scale farmers (GRZ 2004a). In order for the small-scale farmers to reap the promised benefits of a market-led agricultural development system, it is imperative for small-scale farmers to diversify their farm

production in favor of commodities demanded on the market (Bokeloh 2005, GRZ 2001, Kydd and Dorward 2001). Hence, Commercialization of Agriculture Program is hoped to transform the agricultural system of small-scale farmers from being limited to subsistence purposes to being a profitable business in which small-scale-farmers can engage. In order to achieve this transformation, the extension message has continued to emphasize on crop diversification (in favor of crops with demand on market) and conservation farming using participatory extension approaches and public-private sector collaboration in the provision of extension.

In all the agricultural policies since 1980 to 2005, the objective of self-sufficiency in food from domestic production has been central (GRZ 2004a, GRZ 2001, Wood 1990). Therefore, how have the agricultural policy changes affected agricultural production, income and household food security among small-scale farmers?

According to farmers' perceptions, there has been a general decrease in agricultural production since 1980. The production trends showed a decrease in beans, maize, vegetables, sunflower and sweet potatoes and a quite high stable production for groundnuts and an increasing production trend in cotton. The farmers associated the experienced decrease in production for most food crops with low access to credit, inputs and lack of stable prices and reliable market for the crops. This reflects an institutional gap that still exists after reduction of public support in extension and abolishment of monopolistic parastatal marketing, credit and input supply structure in 1989 and early 1990s.

In the case of livestock, farmers felt that the production has declined for cattle, poultry and a slight decrease in production of goats. On the contrary, there was an increase in the production of pigs. The farmers attributed the decline in cattle, poultry and goats to an increase in livestock diseases, lack of veterinary support and lack of money to access private veterinary service. However, Pigs and goats were less affected by diseases and farmers explained that these animals seemed to be quite resistant to the prevailing diseases in the area. Additionally, due to a high number of offsprings (litter) at one birth,

good marketing arrangements in Lusaka and the good market price for pigs, it has led to an increase in pig production.

The farmer's general perception regarding impact of policy changes on income was that there has been a general decrease in income from crops while the income from livestock has increased. The low access to inputs and maize market along with poor rains accounted for the decrease in income from crops. The observed increase in the income from livestock was mainly attributed to income from pigs and goats. The general perception of the small-scale farmers regarding income from non-farm and off farm activities was that it has increased. This was explained as a coping strategy arising due to the decline in agricultural production especially for crops and cattle.

Three common effects of agricultural policy changes on household food security in relation to gender were identified. Firstly, previously women dominated activities such as groundnuts growing, weeding piecework and collection of mushrooms are becoming more popular among men as they seek the potential of earnings from these activities. The general perception of both women and men was that men's involvement in women dominated activities was not a threat to power relations but would enhance understanding and appreciation of women's activities.

Secondly, men especially among the resource rich and variably resource rich are shifting towards cotton production while women have concentrated on small livestock production especially pigs and goats. The reasons given for such changes are that Men have been in control of most cash crops and big livestock; hence they are seeing cotton as a cash crop that is replacing maize. Additionally, very few women are engaged in cotton production because they lack access to inputs and it is labor intensive. On the contrary, the women find pig production relatively easy to manage because pigs are let free to feed on their own for quite a long period of time of the year. Additionally, during farming season pigs are kept in the pens and easily fed from the daily kitchen residues.

Thirdly, the general perception of small-scale farmers regarding household income spending was that the men before liberal policies were very supportive in meeting household food needs due to high income from maize and sell of cattle. It was further explained that after the full implementation of liberal policies, expenditure on average for men became more concentrated towards agricultural inputs than on household food. Consequently, women have increased their expenditure on household food demands. The women explained that this has increased their responsibility towards the family but it has also improved their bargaining position in the household. Hence, the women argued that there has been an improvement in the recognition of the importance of women's income generating activities in a household.

The overall perceptions of small-scale farmers in the study area regarding the policy changes were that policy changes have not improved their household food security situation but have led to deterioration of food security. This was attributed to reduced access to credit inputs, lack of access to reliable market and poor extension support in both crop husbandry and livestock. Farmers did not only associate decline in agricultural production to policy changes but also to the increase in frequency of drought and poor rain pattern over the last 25 years.

The state-led agricultural development was quite successful in delivering agricultural support services to the remote rural areas. As a result, the general perception of the small-scale farmers was that policies behind the state-led agricultural development were better than the liberal policies. However, problems of inefficiency and ineffectiveness, and the fiscal burdens on behalf of the government made it impossible to sustain the subsidies (Kydd and Dorward 2001, Wold et al. 1997). However, liberalization of the input supply system has not generally led to an influx of private traders providing agricultural services and inputs to smallholders in marginal areas (Wold 1998). The private traders are often constrained by problems in accessing fertilizer imports in time and credit for working capital (Kydd et al. 2004, GRZ 2002, Mwanauo 1999). Additionally, the private sector faces high credit and distribution costs due to poor transport systems and low volumes of commodity in remote areas (Saasa 2003, Mwanauo 1999). Due to uncertainties of

government involvement in input supply that is strongly associated with political interests, the private sector involvement is not stable due to uncertainty of returns (Mwanaumo 1999). Moreover, small-scale-farmers explained that they are faced with uncertain maize prices and maize marketing opportunities in the face of relatively higher input prices. The above limitations on both the farmers and private sector undermines the underlying policy objective of increasing small-scale farmers' income, create employment, reduce rural poverty and improve household food security (GRZ 2001).

The problem is not primarily due to market failure but it is more of institutional²⁶ failure and poor co-ordination among different players. This situation is not only true for Zambia but common among most countries in Sub-Saharan Africa (Kydd et al. 2004). The institutional failure puts small-scale farmers in a very vulnerable position for exploitation due to lack of information and bargaining power (Dorward et al. 2004). The most important challenge for Zambia is to develop an agricultural policy that will decrease poverty and foster economic growth and social development. In order to do this, there is need to address institutional problems that constrain small-scale farmers and prevent them from emerging as winners in a liberalized economy.

Small-scale farmers' problem of access to market, credit and inputs for food staples (grain) is not unique to Zambia but widely recognized among developing countries (Harrigan 2003, Kydd and Dorward 2001, Wichern et al. 1999). Stiglitz (2004) argues that developing countries need more than prescriptions of the Washington consensus. Policies must not only address the problem of economic inefficiency in a country but also address problems of social-economic inequalities. What is cardinal is to get the right balance between the state's direct activities and its regulatory role in markets on one hand and liberalization of marketing on the other hand (Stiglitz 2004, Wichern et al. 1999).

²⁶ Institutions in this case refers to the 'rules of the game' that include rule and regulations governing the way thing should be done the agricultural sector while organizations or take holders are 'players in the game'(North 1995) Hence, the term institutional environment in this case is used to mean both the players of the game and the rules of the game.

There is a need for the government in Zambia to provide strong co-coordinating mechanisms to insure that small-scale farmers reap the promised benefits of liberal policies and reduce rural poverty. Therefore, efficiency and effectiveness of the government in ensuring that the rural communities are not exploited in a liberalized market environment are essential. Public investment in infrastructure such as roads and access to information in rural communities should be improved as it will reduce transaction costs and enhance farmers' bargaining power for better prices for their produce. The government must support and nurture the development of non-competitive bottom up interventions such as micro-finance credit facilities so as to improve access to credit. The government has a critical role in facilitating the development of co-operative marketing arrangements where there are few middlemen (as is the case with cotton). Such arrangements with a close link and good information flow between major buyers and farmers do not only ensure markets for their produce but also increase the share of final price that farmers get (Gebre-Madhin et al 2001, Gebre-Madhin 1999).

Therefore, in order for agricultural policies to be relevant for increasing food security and rural poverty reduction without sacrificing economic efficiency in the agricultural sector, there is a need for greater government involvement in building and creating a conducive institutional environment. This calls for a redefinition of government's roles in agricultural credit and input supply, marketing of maize and extension services if small-scale farmers are to be part of the winners in an era of liberalization. Getting the prices right seems not to be a solution for Zambia's agricultural development and neither is excessive state involvement a promising solution. There is need to get good elements of liberal policies as well as good elements of statist policies in policy formulation. Therefore what is important is to get a good balance that will minimize both market failure and institutional failure if agricultural policies in Zambia are to be relevant to the small-scale farmers.

7. REFERENCES

Agrawal, B., 1992, 'The Gender and Environmental Debate: Lessons from India', *Feminist Studies*, Volume 18(1), 119–158.

Ashley, C. and Maxwell, S., 2001, 'Rethinking Rural Development', *Development Policy Review*, Volume 19(4): 395-425

Barker, C. and Pistrang, N., 2005, 'Quality Criteria Under Methodological Pluralism: Implications for Conducting and Evaluating Research', *American Journal of Community Psychology*, Volume. 35, No 3/4, June: 201-212

Boellstorff, D.L., 1996, 'Women in Development: the need for a grassroots gender planning approach'. *Women in development*, Volume 12, No. 1: 45-55

http://www.unl.edu/anthro/anthrogroup/nebraska_anthropologist/issue_archive/95_96/boellstorff.pdf#search='Darcy%20L.%20Boellstorff Last accessed May 2006

Bokeloh G., 2002, 'Actions / Interventions to Improve Food and Nutrition Security at Macro Level' Security' In Klennert, K., (Eds) *Environment, Natural Resources and Food: Achieving Food and Nutrition Security Actions to Meet the Global Challenge*, Feldafing: Internationale Weiterbildung und Entwicklung GGmbH: 167-202

Bryman, A., 2004, *Social Research Methods* (Second Edition), New York: Oxford University press

Central Statistics Office (CSO), 2004, *Living Conditions Monitoring Survey Report 2002-2003*, Lusaka: Living Conditions Monitoring Branch Central Statistics Office

Chambers R., 2002, *Participatory workshops: A sourcebook of 21 sets of ideas and activities*, London: Earthscan

Chambers, R., 1997, *Whose Reality Counts?* London: Intermediate technology publications

Coleman, J. S., 1990 *Foundations of social theory*, Cambridge: Harvard University Press

Copestake G. J., 1990, 'The scope for collaboration between government and private voluntary organizations in agricultural technology development: The case of Zambia', Overseas Development Institute. *Network paper 20*, London: Overseas Development Institute

Cramer, G. L., Jansen, C. W. and Southgate, D. D., 2001, *Agriculture Economics and Agribusiness*, New York, John Wiley & Sons, Inc

Department for International Development (DFID), 2004, *Agriculture, hunger and food security*, London: DFID

Devereux, S., 2002, 'Poverty, Livelihoods & Famine' *Paper prepared for the Ending Famine in the 21st Century Conference*, 27 February -1 March 2002, Brighton: Institute of Development Studies

Devereux, S., 2001, 'Famine in Africa', In Devereux, S. and Maxwell, S. (Eds), *Food Security in Sub-Saharan Africa*, London: ITDG: 117-148

Ells, F., 2003, 'Human Vulnerability and Food Insecurity: Policy Implications' *Forum for Food Security in Southern Africa*, Theme paper, No 3, London: Overseas Development Group

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

Elliott, R., Fischer, C. T., and Rennie, D. L., 1999, 'Evolving guidelines for publication of qualitative research studies in psychology and related fields', *British Journal of Clinical Psychology*, Volume 38: 215–229

Fafchamps, M., Gabre-Madhin, E. and Minten, B., 2003, 'Increasing Returns and Market Efficiency in Agricultural Trade', Discussion Paper No. 60, Washington DC: International Food Policy Research Institute

Famine Early Warning System Network (FEWS NET), 2004, 'Zambia Food Security Update' *November Summary and Implications*
<http://www.fews.net/centers/innerSections.aspx?f=zm&m=1001486&pageID=monthlies>
[Doc](#) Last accessed May 2006

Feder G., Willet, A. and Zijp, W., 1999, 'Agricultural Extension: Generic Challenges and the Ingredients for Solutions', *Policy Research*, Working Paper No. 2129, Washington DC: The World Bank

Fielding, W. and Riley, J., with response by Chambers, R., 2000 'Preference Ranking: A cautionary Tale from Papua New Guinea' *Participatory Learning Approaches* Notes no 37, London: IIED

Food and Agriculture Organization (FAO), 2006a, 'Food and Agriculture Organization Statistics (FAOSTAT) data'
<http://faostat.fao.org/faostat/servlet/XteServlet3?Areas=251&Items=2051&Elements=438&Years=2005&Years=2004&Years=2003&Years=2002&Years=2001&Years=2000&Years=1999&Years=1998&Years=1997&Years=1996&Years=1995&Years=1994&Years=1993&Years=1992&Years=1991&Years=1990&Years=1989&Years=1988&Years=1987&Years=1986&Years=1985&Years=1984&Years=1983&Years=1982&Years=1981&Years=1980&Format=Table&Xaxis=Years&Yaxis=Countries&Aggregate=&Calculate=&Domain=PIN&ItemTypes=Crops.Primary&language=EN> Last accessed May 2006

Food and Agriculture Organization (FAO), 2006b, 'Undernourishment'
<http://www.fao.org/faostat/foodsecurity/Files/NumberUndernourishment.xls>
Last accessed May 2006

Food and Agriculture Organization (FAO), 2006c, 'Women and Food Security'
<http://www.fao.org/focus/e/women/Sustin-e.htm> Last accessed May 2006

Food and Agriculture Organization (FAO), 2005, 'QUASTAT- FAO's Information system on water and agriculture, Zambia'
<http://www.fao.org/ag/agl/aglw/aquastat/countries/zambia/index.stm>
Last accessed May 2006

Food and Agriculture Organization (FAO), 2005, 'Special report: FAO/WFP crop and food supply assessment mission to Zambia, *FAO global information and early warning system on food and agriculture world food program*, Rome: FAO
http://www.fao.org/documents/show_cdr.asp?url_file=/docrep/008/j5511e/j5511e00.HTM
[M](#) Last accessed May 2006

Food and Agriculture Organization (FAO), 1998, 'Rural women and food security: Current situation and perspectives', Rome: FAO
<http://www.fao.org/DOCREP/003/W8376E/W8376E00.HTM#Contents>
Last accessed May 2006

Food and Agriculture Organization (FAO), 1996, 'Rome Declaration on World Food Security and World Food Summit Plan of Action', November 13-17, Rome
http://www.fao.org/documents/show_cdr.asp?url_file=/docrep/003/w3613e/w3613e00.htm
[m](#) Last accessed May 2006

Food Insecurity Vulnerability Information and Mapping System (FIVIMS), 2005, 'What is meant by food insecurity and vulnerability?' Rome: Food Insecurity Vulnerability Information and Mapping System

<http://www.fivims.net/static.jsp?lang=en&page=overview> Last accessed May 2006

Gabre-Madhin, E., Bruce, J. F., 2001, 'Accelerating structural transformation in Africa: lessons from East Asia', In Jayne, T., eds. *Perspectives on Agricultural Transformation*, New York: Nova Science Press.

Gabre-Madhin, E., 1999, 'Of Markets and Middlemen: The Role of Brokers in Ethiopia', *Markets and Structural Studies Division*, Discussion paper No 39, Washington DC: International Food Policy Research Institute

Govereh, J., Jayne, T. S., Nijhoff, J. J., Shawa, J. J., Haantuba, H., Belemu, A., Ngulube, E., Zulu, B. and Banda, A. K., 2002, 'Developments in Fertilizer Marketing in Zambia: Commercial Trading, Government Programs, and Smallholder Farmers', *Policy Synthesis No. 3*, Lusaka: Food Security research project

Government Republic of Zambia (GRZ), 2004a, *National Agricultural Policy*, Lusaka: Ministry of Agriculture and Co-operatives

Government Republic of Zambia (GRZ), 2004b, *Second Poverty Reduction Strategy Paper (PRSP) Implementation Progress Report July 2003 – June 2004*, Lusaka: Ministry of Finance and National Planning

Government Republic of Zambia (GRZ), 2002, *Zambia Poverty Reduction Strategy Paper 2002-2004*, Lusaka: Ministry of Finance and National Planning

Government Republic of Zambia (GRZ), 2002, *Agricultural Commercialization Program (ACP)*, Lusaka: Ministry of Agriculture Food and Fisheries

Government Republic of Zambia (GRZ), 1984, *Zambia Strategy for Agricultural Extension*, Lusaka: Ministry of Agriculture and Water Development

Grandin, B., 1988, *Wealth Ranking in Smallholder Communities: A Field Manual*. London: Intermediate Technology Publications

Hanson, J. and Just, R., 2001, 'The Potential for Transition to Paid Extension: Some Guiding Economic Principles', *Paper presented in the Services: Experiments and Experiences.*" *Allied Social Science, Association Annual Meetings*, January 5-7, 2001, New Orleans

Harrigan, J., 2003, 'U-Turns and Full Crisis: Two Decades of Agricultural Reform in Malawi 1981-2000.' *World Development*, Volume 31(5): 847-863

Harvard J. A. and Mungoma, C., 1996, 'Zambia's stop and go revolution: the impact of policies and organizations on the development and spread of maize technology' *Policy synthesis for United States Agency for International Development (USAID), Bureau for Africa Office of Sustainable Development*, Number 26, Michigan: Michigan State University

Haug R., 1999, 'Some Leading Issues in International Agricultural Extension: A Literature Review' *Journal of Agricultural Education and Extension* Volume 5 (4): 263-274

Haug, R., 1981 'Agricultural Crops and Cultivation Methods in the Northern Province of Zambia: International Development Programs', *Occasional paper* Series Number 1, Ås: Noragric

InterAcademy Council, 2004, *Realizing the promise and potential of African Agriculture: Science and technology strategies for improving agricultural productivity and food security in Africa*, Amsterdam: InterAcademy Council

International Federation of Red Cross and Red Crescent Societies (IFRC), 2005, 'Southern Africa: Food Insecurity Emergency', *Appeal no. 05EA023*

http://www.ifrc.org/cgi/pdf_appeals.pl?05/05EA023.pdf Last accessed May 2006

Irz, X., Lin L., Thirtle, C. and Wiggins, S., 2001, 'Agricultural Productivity Growth and Poverty Alleviation', *Development Policy Review* Volume 19(4): 449-466.

Jansen, D., 1990, 'Agricultural Pricing Policy' In: Wood et al (Eds), *The Dynamics of Agricultural Policy and Reform in Zambia* Iowa: Iowa State University Press: 201-222

Karen, S.F., 1994, *Tree and Land Tenure: Rapid Appraisal Tools*, Rome: Food and Agricultural Organization

Kherallah, M., E. Gabre-Madhin, Delgado, C., Minot, N. and Johnson, M., 2002, 'Reforming Agricultural Markets in Africa', Food policy statement, No. 38, Washington DC: International Food Policy Research Institute (IFPRI)

Kidd, A., Lamers, J., Ficarelli, P. and Hoffmann, V., 2000, "Privatizing Agricultural Extension: Caveat Emptor." *Journal of Rural Studies*, Volume 16: 95-102

Kokwe M. G., 1997, *Maize, Market and Livelihoods: State intervention and agrarian change in Luapula Province, Zambia, 1950-1995*, Helsinki: Institute of Development Studies University of Helsinki

Konandreas, P., Huddleston, B. and Ramangkura, V., 1978, 'Food Security: An Insurance Approach', *Research Report No 4*, Washington, DC: International Food Policy Research Institute (IFPRI).

Kydd, J. DoRward A., Morrison J. and Cadish, G., 2004. 'Agricultural Development and Pro-poor Economic Growth in Sub-Saharan Africa: Potential and Policy', *Oxford Development Studies* Volume 32 (1): 1-22

Kydd, J. and Dorward, A., 2001. 'The Washington Consensus, Poor Country Agriculture: Analysis, Prescription and institutional Gaps', *Development Policy Review*, Volume 19(4): 467-478.

Leichenko, R. M. and O'Brien, 2000, 'The dynamics of rural vulnerability to global change: the case of Southern Africa' *Mitigation and adaptation strategies for global change*, Volume No 7: 1-8

Lister, R., 2004, *Poverty: Key Concepts*, Cambridge: Polity

Loizos, B. and Pratt, P., 1992, 'Choosing Research Methods: Data collection for Development Workers' *Development guidelines* No: 7. Oxford: Oxfam

Lof, G. and Mulele, M. R., 1990 'Changing Role of Extension Service' In Wood, A. P., Kean, A. S. and Warren, D. M., (Eds), *The Dynamics of Agricultural Policy and Reform in Zambia*. Iowa: Iowa State University Press: 343-368

Mason, J., 1994, 'Linking Qualitative and Quantitative Data Analysis' In Bryman A. and Burgess (Eds) *Analyzing Qualitative Data*, London: Routledge

Maxwell, S., 1995, 'Measuring Food Insecurity: The frequency and severity of coping strategies', *Food Policy*, Volume 21, No 3: 291-303

Maxwell S. and Frankenberger T., 1992, 'Household food security: Concepts, indicators, measurements', *A technical Review*: Rome International Fund for Agricultural Development (IFAD)

McEwan, M., 2003, 'Changing land scapes and outliers: Macro and Micro Factors influencing Livelihood trends in Zambia over the last 30 years', Lusaka: Care Southern and Western Africa Regional Management

Mikkelsen, B., 2005, *Methods for development work and research: A new guide for practitioners*, New Delhi: Sage

Ministry of Agriculture and Cooperatives (MACO), Agricultural Consultative Forum and Food Security Research Project, 2002, 'Developments in Fertilizer Marketing in Zambia: Commercial Trading, Government Programs, and the Smallholder Farmer' *Working Paper No 4*, Lusaka: Food Security Research Project

Momsen, J. H., 2004, *Gender and Development*, London: Routledge

Moser, C., 1989, 'Gender Planning in the Third World: Meeting Practical and Strategic Gender Needs', *World Development* Volume 17 (11): 1799-1825

Muliokela, S. W., 1995, *Zambia Seed Technology Handbook*, Lusaka: Ministry Of Agriculture Food and Fisheries

Mwanaumo, A., 1999, 'Agricultural Marketing Policy Reforms in Zambia', *Agriculture Transformation in Africa Conference*, June 27-30, Nairobi

Nichols, P., 2000, 'Social Survey Methods: A guide for Development Workers. Development guideline No 6', Oxford: Oxfam

Njobvu, A. C., 2004, 'Agricultural Policy Reforms and their Impact on smallholder farming and poverty reduction in Zambia', Paper Prepared for the *Citizen's Global Platform, the Global Economic Agenda, Helsinki Process on Globalization and Democracy*, Lusaka: Institute of Economic and Social Research

<http://www.globalplatform.fi/en/focus?sid=221&fg=3&et=16> Last accessed May 2006

North, D. C., 1995, 'The New Institutional Economics and Third World Development', In Harriss, J., Hunter, J. and Lewis, C. M., (Eds): *The New Institutional Economics and Third World Development*, London: Routledge: 17-22

O'Leary, Z., 2004, *Essential Guide to Doing Research*, London: Sage Publications, Incorporated.

Patton M. Q., 2002, *Qualitative Research and Evaluation Methods*, Thousand Oaks: Sage Publication.

Pretty, J., Guijt, I., Thompson, J. and Scoones, I., 1995, *Participatory Learning and Action: A Trainer's Guide*, London: IIED

Putnam, R., Leonardi, R. and Nanetti, R. Y., 1993 *Making Democracy Work: Civic Traditions in Modern Italy*, Princeton, NJ: Princeton University Press

Quisumbing, A. R., Meinzen-Dick, R. S. and Smith L.C., 2004, 'Increasing the Effective Participation of Women in Food and Nutrition Security in Africa', *2020 Africa Conference Brief (Issue Brief) 4*, Washington DC: International Food Policy Research Institute

Reutlinger, S., 1977, 'Food Insecurity: Magnitudes and Remedies', *World Bank Working Paper No 267*, Washington DC: World Bank.

Rivera, W. and Gary, A., 2004, 'Extension Reform for Rural Development' *Agriculture and Rural Development Discussion Paper 8*, Washington DC: World Bank

Rivera, W., 1996, "Agricultural Extension in Transition Worldwide: Structural, Financial, and Managerial Strategies for Improving Agricultural Extension." *Public Administration and Development*, Volume 16: 151

Saad, B. M., 1999 'Food Security for the Food-Insecure: New Challenges and Renewed Commitments' *CSD NGO Women's Caucus Position Paper for CSD-8*, 2000, Dublin: Center for Development Studies

Saasa, O., 2003, *Agricultural Intensification in Zambia: The role of Policies and Policy Processes*, Lusaka: Institute of Economic and Social Research, University of Zambia.

Salkind, N., 2003, *Exploring Research*. New Jersey: University of Kansas

Scheyvens, R. and Storey, D., 2003, *Development field work: A Practical Guide*, London: Sage

Sen, A. K., 1981, 'Poverty and famines', *An essay on entitlement and deprivation*. Oxford: Clarendon Press

Shawa J. J. and Johnson, W. I. R., 1990, 'Input Supply and Marketing' In Wood, A. P., Kean, A. S. and Warren, D. M., (Eds), *The Dynamics of Agricultural Policy and Reform in Zambia*. Iowa: Iowa State University Press: 369-380

Singh, K., 1999, *Rural Development Principles, Policies and Management*, New Delhi: SAGE

Soil Survey, 2002, *Zambia, Agro-ecological Zones*, Chilanga: Mount Makulu Research Station

Stiglitz, J. E., 2004a, 'Current Economic Issues and their Impact on Developing Countries', Jakarta

http://www2.gsb.columbia.edu/faculty/jstiglitz/download/papers/powerpoints/CURRENT_ECONOMIC_ISSUES_AND_THEIR_IMPACT_ON_DEVELOPING_COUNTRIES_2004.ppt#1 Last accessed May 2006

Stiglitz, J. E., 2004b, 'Post Washington Consensus Consensus', *Initiative for Policy Dialogue Working Paper Series*, Task Force on Governance of Globalization, November 2004.

[http://www2.gsb.columbia.edu/faculty/jstiglitz/download/2004_Post_Washington_Conse
nsus.pdf](http://www2.gsb.columbia.edu/faculty/jstiglitz/download/2004_Post_Washington_Conse
nsus.pdf) Last accessed May 2006

Stiglitz, J. E., 2003, 'Globalization and Growth in Emerging Markets and the New Economy', *Journal of Policy Modeling*, Volume 25: 505-524

Stiglitz, J. E., 1998, "Towards a New Paradigm for Development Strategies, Policies and Processes", *9th Raul Prebisch Lecture delivered at the Palais des Nations*, October 19, UNCTAD, Geneva

[http://www2.gsb.columbia.edu/faculty/jstiglitz/download/1998_2_Towards_a_New_Para
digm_for_Development.pdf](http://www2.gsb.columbia.edu/faculty/jstiglitz/download/1998_2_Towards_a_New_Para
digm_for_Development.pdf) Last accessed May 2006

Stringer, R., 2001, 'Food Security in Developing Countries', In Ghosh, B. N., *Contemporary Issues in Development Economics*, London: Routledge: 70-104

Swanson B. E. and Mohamed, M., 2004, 'Introduction to Decentralization of Agricultural Extension Systems: Key Elements for Success', In Rivera. W. and A. Gary., (Eds), *Agriculture and Rural Development Discussion Paper 9, Extension Reform for Rural Development*, Decentralized Systems, Volume 1: 1-6 , Washington DC: World Bank

Tambatamba, M. J. and de Bruin, E. G. A., 1995, *Technology based development for the agricultural machinery sub-sector: Zambia as a case study*, Eindhoven: Eindhoven University of Technology.

Tembo, G. and Haggblade, S., 2003, *Conservation Farming in Zambia*, Washington DC: International Food Policy Research Institute

Tviland, M., 1996 *Credit to small-scale farmers in Northern Zambia*, Ås: Noragric

UNDP (United Nations Development Program), 2005, *Human Development Report, International Cooperation at crossroads, Aid, Trade and Security in Unequal World*, New York: UNDP

Vaidyanathan, A., 'Labor use in rural India: A study of spatial and temporal variations', *Economic and Political Weekly Volume XXI No. 52: A130-A146*

Wangari, M., (2004) 'The green Belt Movement' *The Nobel Peace Prize-2004*
<http://gbmna.org/a.php?id=35> Last accessed May 2006

Webb, P., Coates, J. and Houser, R., 2002, 'Allocative Responses to Scarcity: Self-Reported Assessments of Hunger Compared with Conventional Measures of Poverty and Malnutrition in Bangladesh', *Food Policy and Applied Nutrition Program*, Discussion paper No. 13 TUFTS Nutrition http://nutrition.tufts.edu/pdf/publications/fpan/wp13-allocative_responses.pdf Last accessed May 2006

Weingärtner, L., 2005, 'The Concept of Food and Nutrition Security' In Klennert, K., (Eds) *Environment, Natural Resources and Food: Achieving Food and Nutrition Security Actions to Meet the Global Challenge*, Feldafing: Internationale Weiterbildung und Entwicklung GGmbH: 25-48
http://www.inwent.org/imperia/md/content/unternehmenskommunikation-intranet/internet/publikationen/food_reader_engl.pdf Last accessed May 2006

Williamson, J., 2000 "What Should the World Bank Think About the Washington Consensus?" *World Bank Research Observer*, Volume. 15, No. 2, Washington DC: World Bank

Wood, A. P., 1990, 'Agricultural Pricing Policy Since Independence', In Wood, A. P., Kean, A. S. and Warren, D. M., (Eds), *The Dynamics of Agricultural Policy and Reform in Zambia*. Iowa: Iowa State University Press: 21-58

World Bank, 2003, *Reaching the rural poor: A renewed strategy for rural development*. Washington DC: World Bank

World Food Program, 2002, 'Vulnerability analysis & mapping (VAM).' *Standard analytical framework role and objectives of VAM activities to support World Food Program food-oriented interventions*. World Food Program

Wold K. B., Andersen, L. T., Chulu, E., Gwaba, R., Haug, R., Kabongo, J., Keller-Herzog, A., Kanyangwa-Luma, J., Lwaile, M., Mathiassen A., Mukumbuta N., Munachonga M., Shawa J., Sikana P., Sørensen E., Valen J. S.Y., 1998, *The Sub-Saharan African Women Farmer under Structural Adjustment. Supply response in gender-perspective-a study from Zambia*, Oslo: Statistics Norway

Wold K. B., Andersen, L. T., Chulu, E., Gwaba, R., Haug, R., Kabongo, J., Keller-Herzog, A., Kanyangwa-Luma, J., Lwaile, M., Mathiassen A., Mukumbuta N., Munachonga M., Shawa J., Sikana P., Sørensen E., Valen J. S.Y., 1998, *The Sub-Saharan African Women Farmer under Structural Adjustment. Supply response in gender-perspective-a study from Zambia*, Oslo: Statistics Norway

Wold K. B., Andersen, L. T., Chulu, E., Gwaba, R., Haug, R., Kabongo, J., Keller-Herzog, A., Kanyangwa-Luma, J., Lwaile, M., Mathiassen A., Mukumbuta N., Munachonga M., Shawa J., Sikana P., Sørensen E., Valen J. S.Y., 1998, *The Sub-Saharan African Women Farmer under Structural Adjustment. Supply response in gender-perspective-a study from Zambia*, Oslo: Statistics Norway