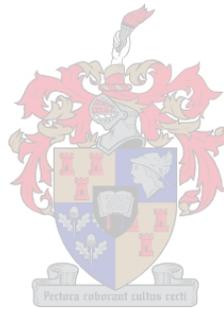


**A CREATIVE TENSION BETWEEN SPIRITUALITY AND PHYSICAL
NEEDS: A THEOLOGICAL ECCLESIOLOGICAL EVALUATION OF A
FOOD SECURITY PROGRAMME FOR THE COUNCIL OF CHURCHES IN
ZAMBIA**



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Doctor of Philosophy (PhD) in Practical Theology at
Stellenbosch University

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DECLARATION

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ABSTRACT

Agriculture is the main stay for Zambia's economic growth and for enhancing household food security. But small holder farmers living in rural areas of Zambia are not able to command food resources because of their low per capita productivity to grow and store food to provide for their families throughout the year. The two three months prior to harvest (January, February and March) are the period of sufficient national deprivation for many rural households in Zambia. This scenario has created a serious food insecurity problem among most households living in rural Zambia as they cannot afford decent meals a day. Maposa community is one of the communities that is food insecure due to a range of factors which include poor agriculture practice, lack of farm inputs and civic awareness on matters that affect their livelihood. The Reformed church in Zambia (RCZ) has been implementing a food security project in Maposa community on the Copperbelt of Zambia from 2007 to 2010 whose main objective of this project is to empower household farmers with agriculture skills so that they can be able to produce food on a more sustainable way to feed their families.

This study therefore, offers an ecclesiological evaluation of the Maposa Food Security Project implemented. Ecclesiological evaluation in this case implies using the Biblical theological perspective to assess the tools RCZ used in this food security.

In addition, it is important to note that Reformed Church in Zambia (RCZ) belongs to an ecumenical body called the Council of Churches in Zambia (CCZ). The Council of Churches in Zambia (CCZ) is an organ that unites all Christian Churches in Zambia and advocates on behalf of member churches all matters related to church registration and also provides guidelines to member churches how to implement community development programmes in line with the governments development plans on national building such as (5th National Development plan and vision 2030). Furthermore, Reformed church in Zambia (RCZ) and other CCZ member churches feed into the annual report of the Council of Churches in Zambia which meets once every year. Though this evaluation is focussed on the Maposa food security project implemented by Reformed Church in Zambia (RCZ), the Council of Churches in Zambia cannot be isolated since it is the mother body of all Christian Churches in operating in Zambia.

The results of this research will be shared with both Reformed Church in Zambia (RCZ) and the Council of Churches in Zambia (CCZ).

The researcher believes that the outcome of this research will help in improving the performance of both the Reformed Church in Zambia (RCZ) and the Council of Churches in Zambia (CCZ) as they participate in transformational development.

This study therefore, investigated the following four areas of transformational development in the food security project:

Participation: to assess whether the farmer beneficiaries in the project have been involved in the planning of the food security project, have identified their own priorities for the project or have used their own resources to exercise control over their own economic, social and cultural development.

Capacity building: to assess how the food security project implemented by RCZ has strengthened the capacity of the local people. This includes the transfer of skills through training for purposes of equipping people to engage in their own development.

Local resource mobilization: to assess the community's participation in the mobilization of their own resources in the project implementation.

Sustainability: to assess the long term viability of this food security project beyond the support of the RCZ.

This study is answering the research question, '*How can the church and its context participate in a practical way in transforming communities where there is poverty and food deficit?*' This research argues that if the church can effectively participate in transformational development through the promotion of sustainable agriculture and food production, the majority of the people living in the rural areas of Zambia can be economically empowered and become food secure all year round. Poverty in this rural area is as a result of inability of households to meet basic needs such as food, shelter and clothing.

OPSOMMING

Landbou is die steunpilaar van Zambië se ekonomiese groei en die versterking van huishoudelike voedselsekerheid. Weens hul kleiner per kapita produktiwiteit is kleiner huur-boere in landelike gebiede egter nie in staat om voedselbronne in stand te hou nie, dit wil sê om genoeg kos vir 'n jaar vir hul gesinne te produseer en stoor nie. Die twee of drie maande voor oestyd (Januarie, Februarie en Maart) is 'n tydperk van tekort in baie landelike huishoudings in Zambië. Hierdie scenario het 'n ernstige voedselsekerheidsprobleem geskep vir die meeste gesinne in landelike Zambië, wat nie drie etes 'n dag kan bekostig nie. Die Reformed Church in Zambia (RCZ) het daarom van 2007 tot 2010 'n voedselsekerheidsprojek gevestig in Maposa-gemeenskap in die Koperbelt in Zambië met die doel om huishoudings met voedselsekerheid te bemagtig deur die bevordering van goeie landbou-praktyke.

Hierdie studie bied dus 'n evaluering van Maposa Food Security Project wat deur die RCZ geïmplementeer is. Die RCZ is 'n lid van die ekumeniese liggaam die Council of Churches in Zambia (CCZ). Die CCZ is 'n liggaam wat alle Christelike kerk in Zambië verenig en namens kerklike lede kwessies oor kerk-registrasie verdedig en ook riglyne verskaf oor hoe kerklike lede gemeenskapsontwikkelingsprogramme moet implementeer wat belyn is met die regering se ontwikkelingsplanne vir nasionale bou (5th National Development Plan, Vision 2030). Die RCZ en ander CCZ lede het dus ook inspraak in die jaarverslag van die CCZ.

Die doel van die studie is 'n evaluering van die bydrae wat die RCZ gemaak het tot die aanspreek van die voedselsekerheidsprobleem in landelike gemeenskappe as agent en katalisator van transformerende gemeenskapsontwikkeling. Die doel van die Maposa-projek is om huishoudelike voedselsekerheid te versterk by lede van die gemeenskap as 'n maatreeël tot ekonomiese bemagtiging.

Die studie het die volgende areas van transformerende ontwikkeling in die voedselsekerheidsprojek ondersoek:

Deelname: om te assesser of die boere-begunstigdes in die projek betrokke was by die beplanning van die voedselsekerheidprojek, hul eie prioriteite vir die projek geïdentifiseer het of hul eie bronne benut het om beheer uit te oefen oor hul eie ekonomiese, sosiale en kulturele ontwikkeling.

Kapasiteitbou: om te assesser hoe die voedselsekerheidprojek wat deur die RCZ geïmplementeer is, die kapasiteit van plaaslike mense versterk het. Dit sluit in die oordra van vaardighede deur opleiding met die doel om mense toe te rus om hulself te ontwikkel.

Plaaslike bron-mobilisasie: om die gemeenskap se deelname in die mobilisasie van hul eie bronne in die projek se implementering te assesser.

Volhoubaarheid: om die langtermyn-volhoubaarheid van hierdie voedselsekerheid buiten die steun van die RCZ te assesser.

Die studie beantwoord die navorsingsvraag: *‘Hoe kan die kerk en die kerk se konteks prakties deelneem aan transformasie waar daar armoede en voedseltekort is?’* Die navorsing betoog dat as die kerk effektief kan deelneem aan transformerende ontwikkeling deur die bevordering van volhoubare landbou en voedselproduksie, kan die meerderheid mense in die landelike gebiede in Zambië ekonomies bemagtig word en heeljaar voedselsekerheid geniet. Armoede in dié landelike gebied is die gevolg van ’n onvermoë van huishoudings om te voorsien in basiese behoeftes soos kos, behuising en klerasie.

Die navorsing-struktuur is:

Hoofstuk 1 dien as ’n inleiding tot die navorsingsproses. Dit bied ’n padkaart waarvolgens die hele studie sistematies aangebied word. Dit is ’n raamwerk vir transformerende gemeenskapontwikkeling en noem maniere waarop teologie prakties aangewend kan word.

Hoofstuk 2 gee ’n oorsig van ’n regverdige en volhoubare voedselsisteem. Daar word betoog dat, indien arm landelike gemeenskappe voedselsekerheid wil behaal, sal

regerings en ander rolspelers betrokke moet raak by ontwikkelingsbeleide en programme om 'n regverdige voedselstelsel te bevorder waar voedsel geredelik beskikbaar en vir almal toeganklik is. Verder word maniere bespreek om landbou te verbeter om voedselsekerheid te bereik in arm landelike gemeenskappe. 'n Oorsig van die voedselsekerheidstelsel in Zambië word ook in dié hoofstuk gebied.

Hoofstuk 3 bespreek landbou en voedselproduksie in Zambië. Die doel van die hoofstuk is om 'n oorsig te gee van landbou in verhouding tot huishoudelike voedselsekerheid veral in die landelike gemeenskappe in Zambië, wat hoë vlakke van voedselonsekerheid ervaar.

Hoofstuk 4 kyk na die Bybelse en teologiese perspektief van landbou en voedselproduksie. Dit bied 'n oorsig van Bybelse lering oor landbou en voedselproduksie deur te kyk na landbou en voedselproduksie vanuit beide Ou Testamentiese en Nuwe Testamentiese perspektiewe. Die doel is om te ontdek hoe boerdery vanuit 'n teologiese oogpunt op die huidige landboustelsel toegepas kan word om voedselproduksie te verhoog.

Hoofstuk 5 bied 'n teologiese ekklesiologiese raamwerk van voedselsekerheid soos gevind in Hoofstuk 4 om vir die RCZ en die CCZ riglyne te bied vir hul poging om betrokke te raak by transformerende gemeenskapsontwikkeling deur die voedselsekerheidsprojek in Maposa-gemeenskap en elders.

Hoofstuk 6 bied riglyne vir die bemagtiging van huishoudings deur voedselsekerheid: Lesse van Maposa-gemeenskap. Dié riglyne vorm die basis vir die implementering van 'n ekklesiologie van voedselsekerheid deur die RCZ, die CCZ en Zambië in geheel.

Hoofstuk 7 is 'n opsomming van die navorsingswerk soos bespreek in Hoofstuk 2 tot 6.

DEDICATION

This dissertation is dedicated to my late parents, Alaida Mwanza (Zulu) and Bernard Zulu, who both passed on in January 2008. Special tribute goes to my mother who introduced me to this journey of faith in the early 1980s. I am so grateful to both of my parents. May the souls of both of them rest in the eternal peace of God Almighty.

I give Glory and Honour to God Almighty!

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I am greatly humbled that the long journey of intensive study has finally come to its logical conclusion. I give praise and honour to God Almighty for strengthening me, giving me the wisdom and patience to complete this project successfully.

I give thanks to my supervisor and mentor, Prof. K.T. August for providing quality time in guiding me during the time of study. May God continue to bless him abundantly for the good work done. *'Dzikomo – Sante sana.'*

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absence from home due to studying. I am so grateful for your care and continued support. I am indebted to you all.

'MWAKOMA NONSE ABALE MWA YESU' – You are all wonderful in Jesus' name!
AMEN.

DEFINING OF TERMS

Poverty: This is an inability of households to meet basic needs such as food, shelter and clothing.

Household: This is a group of persons who normally eat and live together. These people may or may not be related by blood, make common provision for food and other essentials for living. A household may comprise several members and in some cases may have only one member.

Empowerment: In its broadest sense, empowerment is the expansion of freedom of choice and action. It means increasing one's authority and control over resources and decisions that affect one's life. As people exercise real choice, they gain increased control over their lives.

Participation: This is a process through which stakeholders influence and share control over development initiatives and the decisions and resources which affect them.

Development: This is the gradual growth of something so that it becomes more advanced, stronger. In other words, development means becoming better or to start to have a skill, ability or stronger.

Sustainability: In a general sense sustainability means steady state. It implies continuity or to be continued for a long time.

Transformation: This implies a complete change of something or to change the form of something.

Food security: Is generally described in terms of access by all people at all times to sufficient food for active, healthy lives. Food security depends not only on how much food is available, but also on the access that people have to food.

Conservation farming: This is a farming approach which has the main aim of making more efficient use of the soil, water and biological resources and natural processes through improved soil, water and plant nutrient management.

Agricultural productivity: Is a measure of agricultural output that can be produced with given levels of input.

Land quality: refers to the ability of land to produce goods and services that are valued by humans. This ability derives from inherent/natural attributes of soil, water, climate,

topography, vegetation and hydrology as well as produced attributes such as infrastructure and proximity to population centres.

Land degradation: refers to changes in the quality of soil, water and other attributes that reduce the ability of land to produce goods and services that are valued by humans.

(**Source of all definitions:** Oxford advanced Dictionary 2010)

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
AVW	Agriculture Volunteer Worker
BCM	Bwana Mkubwa mines
BSAC	British South Africa Company
BSA	British South Africa
CCNR	Christian Council of Northern Rhodesia
CCZ	Council of Churches in Zambia
CF	Conservation Farming
CFSAM	Crop & Farm Supply Assessment Mission
CSO	Central Statistics Office
CRWRC	Christian Reformed World Relief Committee
PCSC	Parents Community School Committee
DRC	Democratic Republic of Congo
DRC	Dutch Reformed Church
EU	European Union
FAO	Food and Agricultural Organization
FGD	Focus Group Discussion
FEWSNET	Famine Early Warning SYSTEM Network
FISU	Federation of International Scientific Union
FRA	Food Reserve Agency
GART	Golden Valley Research Trust
GMC	General Missionary Conference
GRZ	Government of the Republic of Zambia
HIV	Humane Immune Virus
ICRC	International Convention on the Rights of the Child
IFAD	International Fund for Agriculture Development
IFC	International Finance Corporation.
IFPRI	International Food Policy Research Institute
KCM	Konkola Copper Mines

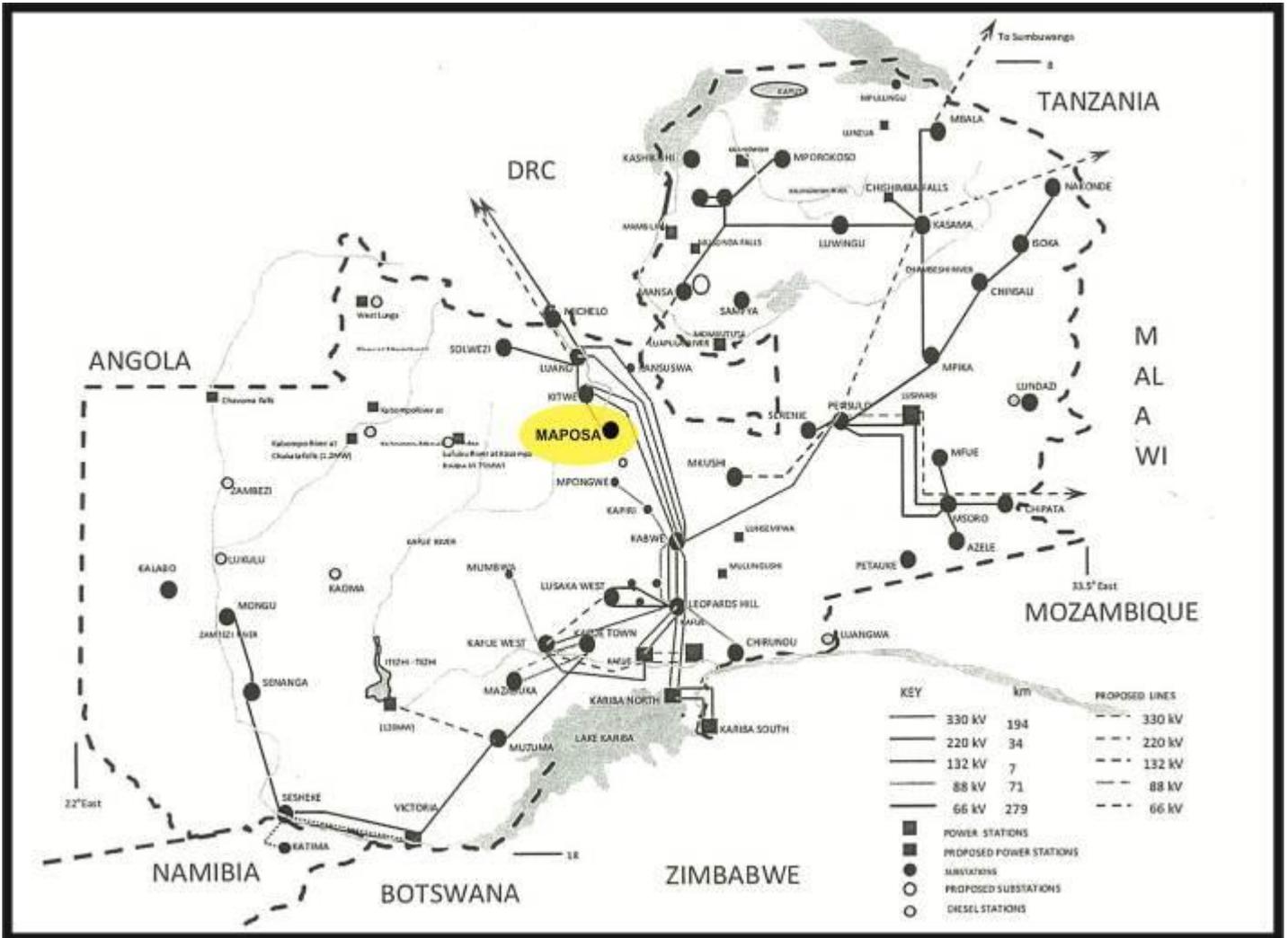
LCM	Luanshya Copper Mine
MDG's	Millennium Development Goals
MMD	Movement for Multi-Party Democracy
MOH	Ministry of Health
NAIS	National Agricultural Information Service
NCM	Nchanga Copper Mines
NEPAD	New Partnership for Africa's Development
NGO	Non-Governmental Organization
NIV	New International Version
OFDA	Office of Foreign Disaster Assistance
OFS	Orange Free State
PLA	Participatory Learning Action
RAMCOZ	Roan Antelope Mining Corporation of Zambia
RCSA	Regional Centre for Southern Africa
RCZDD	Reformed Church in Zambia Diaconia Department
RCZ	Reformed Church in Zambia
RDC	Residence Development Committee
ROCS	Reformed Open Community Schools
SADC	Southern Africa Development Community
SARPN	Southern Africa Regional Poverty Network
SWOT	Strength Weakness Opportunity Threat
USAID	United States Agency for International Development
UN	United Nations
UNESCO	United Nations Education Scientific and Cultural Organization
UNICEF	United Nations International Children Emergency Fund
UNIP	United National Independence Party
WCED	World Commission on Environmental Development
WFP	World Food Program
WHO	World Health Organization
ZCCM	Zambia Consolidated Copper Mines

ABBREVIATIONS OF BIBLE BOOKS

Gen	Genesis
Ex	Exodus
Lev	Leviticus
Num	Numbers
Deut	Deuteronomy
Kgs	Kings
Job	Job
Ps	Psalms
Prov	Proverbs
Is	Isaiah
Jer	Jeremiah
Ezek	Ezekiel
Hos	Hosea
Amos	Amos
Zech	Zechariah
Mt	Matthew
Mk	Mark
Lk	Luke
Acts	Acts
Jas	James
Pe	Peter
Rev	Revelation

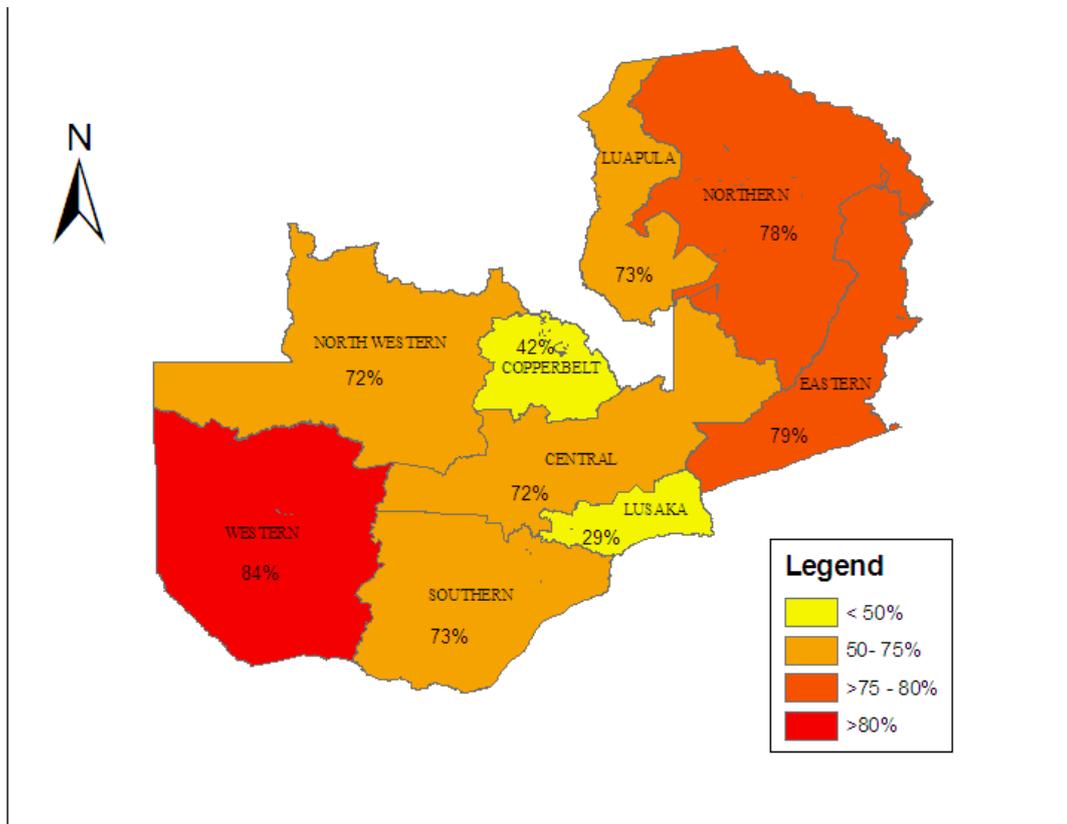
MAPS

MAP 1: LOCATION OF MAPOSA COMMUNITY.



Source: Ndhlovu, M. (2010). Energy Regulation Board of Zambia

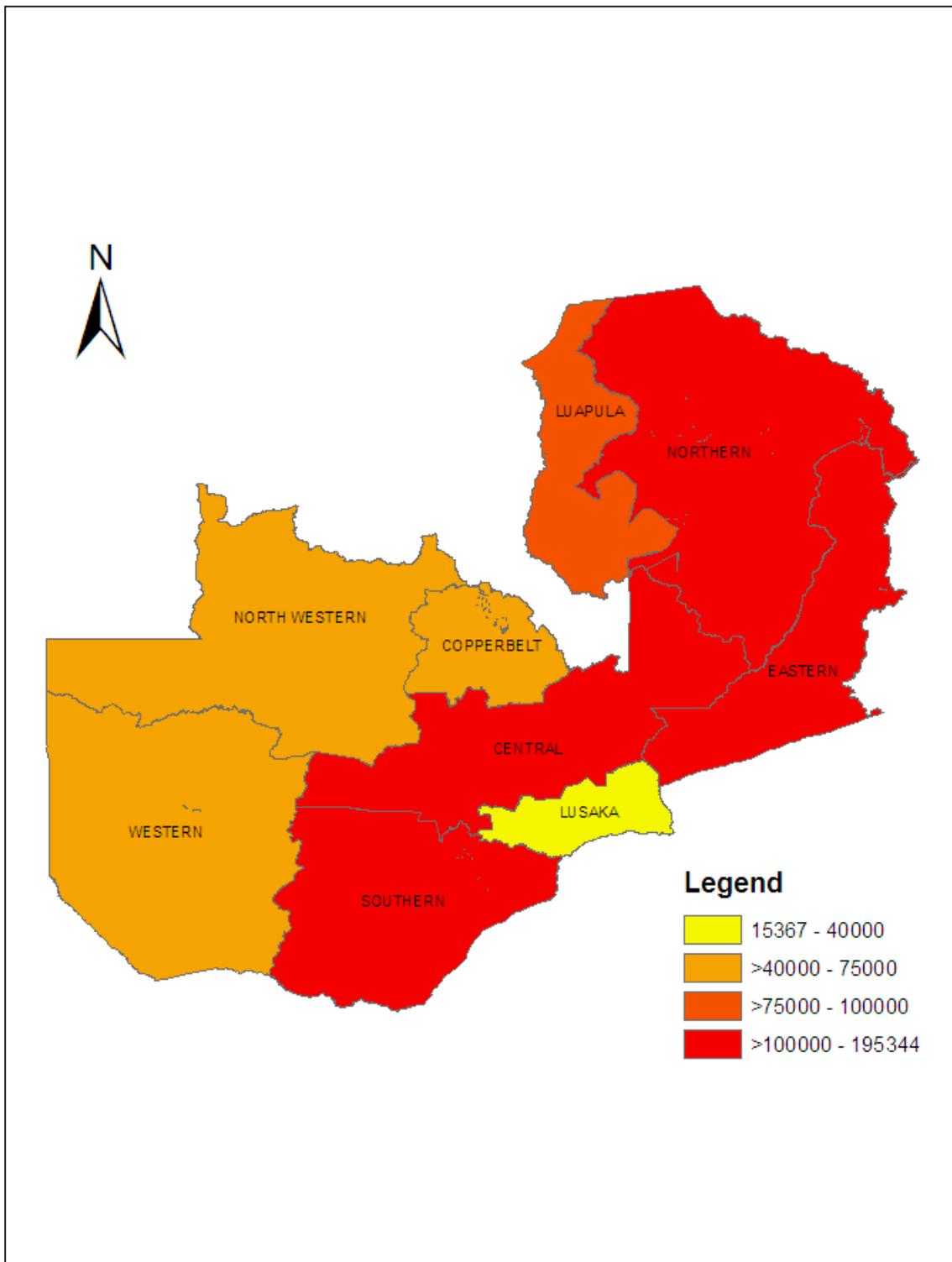
MAP 2: INCIDENCE OF POVERTY IN ZAMBIA



Source: Living Conditions Monitoring Survey 2006.

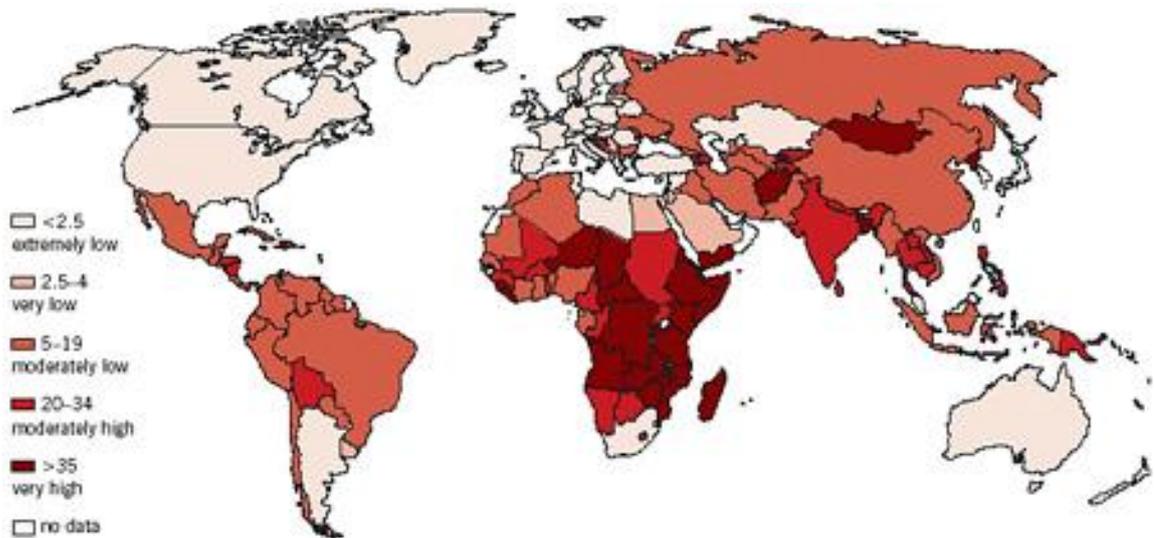
(<http://www.aeu.msu.edu/agecon/fs2/zambia/index.htm>).

MAP 3: HOUSEHOLDS WITH ONE HECTARE OF LAND OR LESS



Source: CFS 2009/10

MAP 4: PERCENTAGE - UNDERNOURISHED PER COUNTRY



Source: <http://www.grida.no/geo/geo3/english/fi308.htm>

CHAPTER 1

INTRODUCTION AND LAYOUT OF THE RESEARCH

1.1 PRELIMINARY REMARKS

This chapter presents the outline of the research: *A creative tension between spirituality and physical needs: a theological ecclesiological evaluation of the food security program for the Council of Churches in Zambia.*

Various schools of thought have contributed to a better understanding of the magnitude and nature of the global food problem. Many people feel optimistic that provision for future dietary needs will be made through the means of technological breakthroughs to increase food production. The general view is that food supplies, especially of the low income groups, are threatened by the alarming environmental degradation caused by practices such as the unnecessary cutting off of trees, cultivation along river banks and by global warming in general.

In the face of these perceptions and motivated by the national interest in food security, the church and other non-governmental organizations have, as a priority on their agenda, put into place food security measures for the Zambian people. In this regard, this research study has been designed in such a way as to investigate the measures that have been put into place.

1.1.1 BACKGROUND AND RATIONALE

The background and the rationale for this research is the worsening economic situation in Zambia since the 1970's affecting the majority of people's living standards as most of them are wallowing in poverty (UNZA 2002: 61). Worse still, the drop in copper prices at the London metal exchange during the 1980's has worsened the situation especially on the copperbelt as mines were shut down and people thrown out of employment (Soko 2010: 36). This situation is posing to be a very big challenge to the

church in Zambia. The following brief synopsis aims to offer a perspective on the prevailing situation in Zambia.

Zambia has been experiencing economic and social problems resulting in deterioration of living standards and conditions for most of the people. Incomes continue to decline, human survival in Zambia has become more and more difficult. Most people have been affected in the areas of food security, health, sanitation, education and employment (UNZA 2002: 61).

The government of Zambia has recognized that the present poverty levels are quite high. In 1991, 69.7% of all Zambians were living below the poverty line with expenditure below the level to provide for basic needs as reported by (UNZA 2002). Rural poverty is more prevalent, deeper and more severe than urban areas. The incidence of poverty and food insecurity in 1996 was at 82.8 % for rural areas and 46% for urban areas. Turning to severity of poverty, the figures were 36.5% for the rural areas and 19.4% for urban areas in the same year. Rural poverty is more prevalent in remote provinces and is especially severe in the more remote districts within the provinces (UNZA 2002: 61).

The highest incidences of rural poverty is found in Western Province (94%) followed by North Western and Luapula Provinces (92%). However, these provinces only account for 20% of the rural poor due to their low population densities (CSO, 1996).

From the time when Zambia received independence in 1964, the country has been dependent on copper exports as its major foreign exchange earner. The situation has remained the same until today. It is the legacy of colonial power; in the case of Zambia, the British government. Apart from copper exports, no other areas of economic growth, such as agriculture, were developed (Lombard & Tweedie 1974).

The earnings from the copper exports were used to subsidize basic commodities such as food supplies, health facilities, education and transport. This situation created a syndrome of dependency on the government. Because life in urban areas offered greater financial potential, most people from rural areas flocked into urban areas in search of free education, cheaper transport, free medical services and subsidized food supplies. When copper prices dropped in the 1980s, the government ran into trouble because it

had no money to provide cheaper social amenities to its citizens. This led to heavy borrowing from the World Bank and the International Monetary Fund and, as a result, the country sank even further into economic problems and the people became more impoverished (Soko 2010: 36f and Valdes 1993).

Furthermore, the economic programs designed by the government during the period of 1968 to 1991 were guided by the Zambian philosophy of humanism and did not yield any results. In the late 1980s the government was under pressure from the donor community who persuaded it to shift to a free market economy. This resulted in the privatization of government-owned companies. Many people lost their jobs because the new owners of the privatized companies could not absorb the whole work force. Many graduates from colleges and the university could also not be employed by either government or private companies. This situation led to a serious increase in poverty levels.

In addition, the HIV/AIDS pandemic has worsened the situation in the country. Most households are either infected or affected by the pandemic and this has made many families vulnerable to abject poverty. Instead of earning an income, bread winners spend their time nursing their sick relatives or burying their beloved ones who pass on. As a result the poor continue to become poorer.

The other contributing factor to food insecurity in the country has to do with the changing weather patterns which most small scale farmers fail to read. At times, the rains start early, for example in October, and then stop by the end of January. At times, the rainfall is too heavy, causing floods and destroying crop fields. In some cases, the traditional seeds planted by small scale farmers, fail them (GART 2010).

Amidst all these challenges, the Church in Zambia has tried to initiate community development programs to improve people's living standards but not in unified way to have a huge impact. The problem is that each denomination has been providing support to communities in their own small way as such the contribution of the church is not having a significant bearing in communities where the church is represented. This research therefore is proposing a coordinated way of community development work by CCZ in order to enhance church relevance in transforming communities through sustainable development programs in Zambia. This is a call for CCZ to initiate dialogue

between denominations so the church in Zambia becomes a united force in addressing the social challenges that the poor rural households are facing.

In the light of the inadequacy of food security, this thesis argues that the Christian theology needs to engage transformational development in sustainable food production in order to enhance household food security from a theological ecclesiological perspective. The Church in Zambia should be visibly seen promoting the new values for community support by appropriating a food security framework within their ecclesiastical structures. This ecclesiastical appropriation ought to be extended to the local communities and the nation at large.

1.2 MOTIVATION

The central motivating factors in undertaking this study are **firstly**, to enhance my understanding of transformational development that addresses poverty in general. I also want to explore and understand how development that comes within the individual and local community enhances livelihood improvement. **Secondly**, I want to widen my knowledge on the issue of sustainable food production that enhances food security in order for me to effectively and efficiently discharge my duties as a community development worker within the Reformed Church in Zambia and beyond.

As a Director of Diaconia Department of the Reformed Church in Zambia, it has always been my desire to work towards improving people's living standards. Ministry to the people who are socially challenged requires passion, commitment, love and sacrifice and dependence on God in order to make a contribution to people's well being. This is a call to a life in the service of God.

My interest in community development work started way back in 2000 when I was a congregation minister in Kabushi congregation in Ndola on the Copperbelt province. Due to high levels of poverty in the community as a result of unemployment, the HIV/AIDS pandemic and lack of food which was affecting even church members, ministers from different denominations came together and formed a group to address the social challenges which people were facing in order to provide support for their livelihoods. The goal of the pastors was to mobilise resources from their own

congregations in order to support members of the community in general. This worked very well for the group as it received support from the Churches and the local government and individual donors. In 2004, I was called to serve another congregation in the Northern part of the Copperbelt in a town called Chililabombwe. I had thought shifting from Kabushi congregation to this new place marked the end of community service. My thinking was proved wrong because during my induction, a senior government official attended this welcoming service. A few weeks later, I received a letter informing me that I was selected to be part of the District Development Coordinating Committee (DDCC). The DDCC is the highest development coordinating committee of any district in Zambia. Members who make up this committee are the Directors of companies and senior government officials within the district. It is from here that I was exposed to serious development issues that take place in the district. I served in this committee for two years as the only clergy until the RCZ appointed me Director of the Diaconia Department in 2006.

Serving in this capacity has exposed me to many social challenges affecting people and thus needs serious interventions by both government and the church. The church's community development approach is cherished more by communities than those advanced by non church organizations.

In addition, when I obtained a Masters Degree at Stellenbosch University in development studies it became an added value to my calling to service the vulnerable people as was able to provide service to the community from an informed mind. The Masters Degree became the basis to enrol for PhD program in 2008 to enable me widen my knowledge in transformational development.

This research therefore, serves as a theological framework for an Ecclesiological evaluation for the food security program within the Reformed Church in Zambia (RCZ) and the Council of Churches in Zambia (CCZ) at large. This Ecclesiological evaluation will be based on the biblical interpretation of food, food production and land use. Chapter 4 of this research will provide the basis for an ecclesiological framework for food security for the Reformed Church in Zambia (RCZ) and the Council of Churches in Zambia (CCZ) in general.

According to August (2006: 15) the idea of transformation development is not posed as an alternative development strategy but as a Christian framework for looking at human and social change

.
A transformational development from a theological ecclesiological perspective is proposed in this study as an approach based on local peoples participation, capacity building and local resource mobilization to enhance sustainable livelihood. This Theological and ecclesiological framework is believed to be the suitable tool to livelihood improvement in communities challenged with high levels of poverty and food shortage in Zambia.

The final product of this research project will serve as a manual for sustainable agricultural development strategies for the Reformed Church in Zambia (RCZ) and the Council of Churches in Zambia (CCZ) as they engage in transformational development within the Zambian context. The research is intended to serve as a resource material and a contribution to transformational development from an Ecclesiological perspective within the Zambian perspective and beyond.

The result of this research is intended to meaningfully contribute to the Zambian community by offering it theological insights on the subject food, food production and land care as a strategy to livelihood improvement among the rural poor communities.

1.3 PROBLEM STATEMENT

Population growth and stagnant agricultural production are contributing to an emerging structural deficit of food crops in Maposa community on the copperbelt province of Zambia. Finding ways of effectively coping with this emerging food deficit is critical for fostering economic growth, reducing poverty, and enhancing food/nutrition security for small holder farmers living in this part of the country.

Addressing this challenge requires the government of Zambia placing agriculture and the associated processes of food production, trade, processing, and consumption at the forefront of the economic development strategy for the nation and the church also playing its pivotal prophetic role in transforming communities through evangelism and promotion of sustainable agriculture to enhance household food security.

Zambia is in a unique position to not only leverage agriculture as an engine for poverty reduction and improved nutrition, but to become the *breadbasket* of southern Africa.

Despite these unique endowments, agricultural growth in Zambia remains stagnant, poverty rates in rural Zambia remain stubbornly high, at 80% of the population, and incidences of stunting, malnutrition, and wasting continue to disproportionately affect rural Zambians (Sitko 2011).

Fostering improvements in the production and marketing of the food crops that are of the greatest importance to small-scale farmers and the urban poor provides the best vehicle for stimulating economic growth and poverty reduction in Zambia. Yet, supporting small-scale farmers to earn more from agriculture and for urban consumers pay less for their food does not immediately translate into improvements in the nutritional status of Zambians.

This thesis therefore, attempts to contribute to the search for options that would ensure sustainable agriculture and food production amongst the poor rural small holder farmers in Maposa community of Zambia from an ecclesiological perspective.

1.4 OBJECTIVE/GOAL OF THE STUDY

The objective of this study was to answer the question, *'How can the church and its context participate in a practical way in transforming communities where there is poverty and food deficit?* Therefore, the objective of this study is outline as follow:

- To examine to what extent the Reformed church in Zambia has been involved in livelihood improvement for the rural poor communities in Maposa community.
- To conduct a SWOT analysis for Reformed Church in Zambia and its diaconal ministry.
- To assess effectiveness, efficiency, relevance, impact and sustainability of the food security project.

- To make recommendations to the Reformed Church in Zambia (RCZ) and the Council of Churches in Zambia (CCZ).

1.5 HYPOTHESIS

This research has been undertaken in full view of the food insecurity situation among the small scale farmers living in Maposa community on the copperbelt of Zambia. Given the level of poverty in Zambia where incomes are far below the poverty datum line, the food insecurity affecting most rural households like Maposa community is a serious problem requiring urgent attention. With a great endowment of natural resources, agriculture is one of the leading critical sectors with greatest possibility for generating economic growth and increasing food security if well managed in Maposa community and Zambia in general.

Small scale farming which represents a large potential resource for increased agricultural production and poverty reduction is underutilized in this part of the country. However, realization of this potential will require an enabling policy environment by the government of Zambia. This food insecurity among the rural community like Maposa as pointed out above; require participation of all civil society organizations in Zambia to supplement the efforts of government in addressing hunger. National Church bodies in Zambia such as the Evangelical Church of Zambia (EFZ), the Council of Church in Zambia (CCZ) and the Catholic Episcopate Conference (ZEC) should be seen working together in the community to enhance community development through the promotion of food security. The researchers' argument is that participation in addressing hunger by individual churches is well come but the impact on the community and the nation at large is very minimal. The presupposition of this research is that the church in Zambia must unite their efforts in addressing the food insecurity problem in the rural areas of Zambia.

According to August (2010: 48) says the basis and motivation for the churches role in development is its relationship with and it's calling by God. The Church in contrast with the secular agencies with altruistic goals involves herself in the community development out of a deep concern for humanity and in obedience to Gods plan. The

church has different perspectives on history. The church knows about Gods intention for the world, which was set in motion at creation already. It will reach its ultimate consummation in the return of Jesus Christ and the future He will bring to the world: the consummated kingdom of God.

In view of the above, Reformed Church in Zambia (RCZ) has been working with the farmer households in Maposa community from 2007 promoting sustainable agriculture practice and provision of farm inputs as a measure towards realization of household food security. This research therefore, investigates the mechanism implored by the Reformed Church in Zambia in the food security project in Maposa community to improve upon agriculture production from an ecclesiological evaluation perspective.

1.6 RESEARCH OBJECTIVES

The specific objectives of this research are,

- (i) To examine to what extent the church in Zambia has succeeded in meeting its short and long term goals of helping people improve their livelihood through agriculture and household food security.
- (ii) To identify strengths and weakness in the church's programs for food production by looking at the participation and empowerment of its beneficiaries.
- (iii) To assess the effectiveness, efficiency, relevance, immediate impact and sustainability of the food production program.
- (iv) To make recommendations the RCZ and CCZ in general regarding future actions.

1.7 DELIMITATION

This research is limited to the *Zambian* context of agriculture and food security. It is limited to the Reformed Church in Zambia in the context of its community development interventions. It is also limited to the Council of Churches in Zambia (CCZ) which also embraces the work of the Reformed Church in Zambia (RCZ) as one of the founder and participating member of the Council of Churches in Zambia (CCZ). Furthermore, this

study is also limited to the Christian understanding of food production that enhances food security and the role of the church to empower rural poor households in sustainable agriculture and food production.

1.8 STUDY RELEVANCE

It is envisaged that the product of this research would be a resource for practicing transformation development in the Reformed Church in Zambia (RCZ) and the Council of Churches in Zambia (CCZ) in general. This work is an attempt to contribute to the search for a life enhancing framework for rural development that aims at improving the livelihoods of people through the promotion of sustainable agriculture.

The result of this research is anticipated to serve as a foundation from which the church in Zambia can participate in transformational development through the promotion of sustainable agricultural to enhance household food security in the rural Zambia.

Moreover, the work will also serve as a theological framework of engaging the church to participate efficiently and effectively as a change agent and catalyst in transformational development from an Ecclesiological perspective.

1.9 METHODOLOGY

The methodology used includes a literature study and case study. Focus group discussions are used as a tool to access required data. In the first place, the literature study will cover both primary data sources and secondary data sources. A historical survey of the Council of Churches in Zambia (CCZ) with a special focus on its member church, the Reformed Church in Zambia (RCZO), will be conducted. Vital documents on agriculture production and food security will be critically studied and analyzed.

As the focus of this research will be on a case study, the empirical research methodology through qualitative data collection method will be used to acquire firsthand information from the field. Mouton (2001: 98) defines empirical field research as that part of the process that involves going into the field to gather data. Empirical research is actually the doing stage of the research. The field work as applied to this

research, therefore, signifies that the researcher physically entered the field, met with stakeholders to gather data and/ or information relevant to the research. Structured and unstructured interviews will be conducted to gather data in a much broader perspective. It is expected that this research methodology will offer positive results that will contribute to academic enhancement, church relevance and serve as a tool within the framework of the household food security issues in the Zambian context.

1.10 LITERATURE REVIEW

Freudenberger (1976: 21ff) and Likanty (1990), have extensively looked at the causes of food shortages in Africa. They argue that food shortage exists as a result of colonial legacy, resource abuse and agricultural exploitation. In fact, colonial masters used mechanisms of food production which are not workable in Africa. For example, they trained the workforce to concentrate on the cultivation of non-edible crops such as cotton and tobacco. These crops continue to be planted in Zambia and elsewhere in Africa. This practice has resulted in resource abuse, like the careless cutting down of trees for construction of burns, firewood for curing tobacco and extensive mechanism for tobacco production. This analysis is also supported by Dodge (1977) and can be suitably applied to this study.

Berck (1993: 19), Oyer (1984) and Lewanika (2003) all argue that despite ample production and large food surpluses in developing countries, hundreds of millions of people still struggle for their daily bread. These scholars point out that there is food insufficiency, especially in Africa where most people can hardly afford to have three meals a day.

Both FAO (2000) and IRIN (2009) estimate that one out of every eight people in the world suffers from chronic malnutrition.

The World Bank estimates that almost 400 million people suffer from a severe food deficiency and an addition 350 million people cannot afford even the minimum nutrition required for livelihood (World Bank, 1986). This is currently the Zambian experience where most people in the remote parts of the country are starving due to non-availability of food (Mkandawire: 1991: 37).

According to the World Bank report of 1986, it was projected that the years ahead would witness the hunger problem getting worse rather than better. In 1980 the US presidential commission on world hunger warned that “a major crisis of global food supply of even more serious dimensions than the present energy crisis appears likely within the next 20 years” (World Bank 1986). 16 years down the line, this projection is becoming a reality as most countries in the Sub Sahara Africa have food deficits almost every year and its people wallowing in abject poverty as noted by Mkandawire (1991).

According to Mkandawire (1991: 37), on the average, Southern Africa Development Coordinating Community (SADCC) countries produce 90% of the regions food needs. Zambia is one of the deficit countries as far as food availability is concerned.

De Wet and Schoeman (1992:1) also point out that there is a serious food shortage in the Sub-Saharan Africa. He describes the situation as alarming as many people try to survive without having enough food to sustain their living.

Denninger et al. (1996:3) like other scholars also argues that the problem of food insecurity would appear most intractable in Sub-Saharan Africa, where the number of people who suffer from hunger has increased by 46% since 1970 to 175 million in 1995. The part of the African population that falls below the poverty line could be as high as 50%. Food security therefore, requires sufficient production and the supply of adequate nutritional quality that can be accessed by households and individuals. It needs to be sufficient to provide for adequate feeding to ensure normal growth at young age and an active and healthy life at an adult and old ages. The African food security has therefore been a much debated and studied issue in development.

Michael (1995:1ff) has highlighted the various ways of improving food security from the grass roots up to the national level. Although some of his hypotheses would have little benefit for a small holder farmer, he has tried to look at the basic methods of food production such as gardening which the church in Zambia has not fully explored to empower the rural poor households. These types of options have been neglected by the church in Zambia.

On the other hand, Mike (1998:1ff) argues from the perspective of food processing as the only alternative to food security. He does not explore about how rural small holder farmers can be able to process food so that it stays fresh for longer and does not go to waste.

Kuyper (1991: 24) gives a different view of food security. He claims that the church has been too slow to address the issue of food crises in its entirety. Kuyper's weakness is that he does not give an alternative answer to how the church could have acted faster. He leaves the argument hanging in the air.

Booty (1982: 13) focuses on one of the true tasks of the church, namely that of being a servant. According to him, the church is the community in the world that serves God and His creation. Booty continues by saying that without service, the church ceases to fulfill the task for which it was created. Booty is mindful of the mission of the church. He states that Jesus' ministry is holistic (Booty 1982: 18). He reflects on Matthew 25, which teaches that 'the ministry of service hinges on food provision, drink, clothing and shelter'. His dictums are realistic in the sense that he includes the servant hood of the church. The church as a servant should shoulder the challenge to offer service to those in need of physical food. In this case, the church should have a clear vision and an engaging mission statement for it to be relevant in this day and age.

Gelder (2000: 23) argues that the church is a unique community of God. The church is created by the Spirit. Every ecclesiology needs to account for the development character of the church as the creation of the Spirit. The Church therefore needs to demonstrate a new lifestyle before the world, one that breaks the cycle of anger, reaction and revenge that characterizes the world's practices. This is the essence of the church. The core of this lifestyle is to be Christian service. Christians are to serve both fellow believers and those who do not believe in Christ, even when they are hostile and abusive. This view of the church as the body of Christ is also advanced by Gibbs (2001).

Aarflot (1988) in agreeing to the views of both Gelder (2000) and Gibbs (2001) stresses the fact that the church should remain the church in this world as it is the Voice and Mission of the people of God. Therefore, the church in the world should, under no

circumstances, change its status to suit that of the world. It should rather remain the Church of Jesus Christ.

Coetzee (1987) in his work '*Development for people*' seeks to provide a theoretical and empirical framework within which the holistic human purpose of the total development effort can be situated. Coetzee contributes to the construction of the social projects which aims at people and their needs. Coetzee's view is very relevant to this study on food security.

Kung (1995) in his book the '*The Church*' argues that the modern church does indeed have a task to fulfill in modern society. In order to do this successfully, it must return to the place from which it proceeded, must return to its origins, to Jesus, to the gospel. This means moving forward to a new future that has God in mind for mankind. This is a general task for the church at large. Nonetheless, it contributes to the strengthening of the role of Zambian churches in social transformation.

Moltmann (1978), in his book '*The Church in the Power of the Spirit*', like Kung, argues that the church has a specific mission in the modern world. Unlike Kung who tends to be historical in his exposition of the Church, Moltmann feels that if the church is to make any meaningful contribution to community development in the modern society, it needs situate itself between *the already* and *the yet to come*. That is to say the church should fulfill its mission in the context of the kingdom of God as a present reality and as an event aimed at the future. This approach gives balance to this research in that not only should one emphasize life in the now, but life in the future when all things will be restored in full by means of divine cosmic intervention.

Sachs (2004: 226ff) argues that the end of poverty will require a global network of cooperation among people who have never met and who do not necessarily trust one another. One part of the puzzle is relatively easy. Most people in the world, with a little bit of prodding, would accept the fact that schools, clinics, roads, electricity, ports, soil nutrients, clean drinking water are the basic necessities not only for a life dignity and health, but also for economic productivity. They would also agree the fact that the poor need help to meet their basic needs but they might be skeptical about whether an effective intervention is possible.

Cathie et al. (1987) indicates that food security is a very general idea which embodies a number of different concepts regarding the underlying causes of the food problem in developing countries. The different concepts to the underlying causes of food problem such as the global economy, droughts, floods and the HIV/AIDS are explored in this study.

Sugden and Samuel (1987: 25f) write that transformation is a joint enterprise between God and humanity. It involves a transformation of all areas of human life, such as sustenance, equity, justice, dignity and freedom, participation, reciprocity, ecological soundness and hope. This view is also supported by Klinken (1989). This theory is very much relevant to this study.

In addition, Lovin (2000) and Hyens (1987) argue that moral learning ultimately happens in the church. The church is a platform that shapes one's existence into a Christ like life and one's being into a true image of God.

Furthermore, Nudge (1998) in agreement with both Lovin (2000) and Hyens (1987), notes that the church is actually a moral community reflecting the life of Christ in the world. This links closely with the focus of this research as it investigates the ecclesiological contribution of the church in Zambia in a holistic manner.

August (2010: 48) also says that the basis and motivation for the churches role in development is its relationship with and it's calling by God. The Church in contrast with the secular agencies with altruistic goals involves herself in the community development out of a deep concern for humanity and in obedience to Gods plan. The church has different perspectives on history. The church knows about Gods intention for the world, which was set in motion at creation already. It reaches its ultimate consummation in the return of Jesus Christ and the future He will bring to the world: the consummated kingdom of God. This is the focus of this study as it reflects on the fact that the church should do development out of its sense of God's concern for humanity and in obedience to God's plan.

While Kothari and Minogue (2002) indicates that people have always been agents of their own development; at times working alone, at other times through collective endeavor. This being the case, the church in Zambia should exercise caution when it comes to empowering people because people are agents of their own development.

In addition to what others have written about the church, Dutchrow (1995) argues that the church must always strive for a new economic system of life in the world and society. The new economy must be life sustaining such as: the lives of all fellow creatures on the earth need to be sustained through the satisfying of their basic needs, the needs of all fellow creatures on earth and the needs of future generations. This theory can be suitably applied to this study.

According to Atkinson (1995: 151) much research has been carried out on rural food security in general, but little has been done on food security from the ecclesiological perspective. This analysis makes this study very relevant from the Zambian perspective.

The arguments of both Bosch (1991) and Guder (1998: 13) regarding the purpose of the church is very important as both indicate that the church is to be of service to the mission Dei, representing God in and over against the world, pointing to God, and holding up its calling before the eyes of the world. The compassion of God is the motivating power of his mission into the world. This study encourages the church in Zambia to be a mission church providing service to the Zambian people, especially those who experience food insecurity.

Hendricks (2004: 33) furthers the argument of Bosch by saying that a missional praxis theology practices theology by first focusing on the local particular issues with the purpose of doing something about the reality and problems that confront the faith community, as well as society. This should be the focus of the Church as the community of Jesus Christ.

It is imperative for the church to participate in community transformative action so that local and national poverty, low self-esteem and other issues affecting the body of Christ and the surrounding communities are addressed. This calls for the church to exercise the

power of servant leadership as pointed out by both Green Leaf (1988) and McKee (1990).

According to Bragg (1987: 39) transformative action means taking *what is* and turning into *what it could be*. In the sense of community development, Bragg believes that transformation is theologically more fitting than mere development because it comes with sound development and shows Gods active role in human development. The transformation, to which the Bible inspires humans, is transformation of both individuals and communities. This kind of transformation allows people to relate to God, fellow human beings, nature and themselves.

Transformation viewed from a theological perspective involves a life sustenance that addresses people's basic needs, equity, justice, dignity and self-worth, freedom, participation, reciprocity, culture fit, ecological soundness, hope and spiritual transformation (Myers 1999: 95).

These are some of the important works of scholars that have been reviewed to form a firm academic background for this research. As noted already, these are general works written mainly for other contexts. For this reason, there is great need for research to be done on the specific topic of food security in the context of the Council of Churches in Zambia through its participating member church (RCZ). This study attempts to fill this academic gap. It is hoped that more researchers will, in future, be motivated to further analyze the issues that this study will raise.

If the church in Zambia is to enhance its participation in community development on a more fundamental level, the contribution outlined above is what they should offer. They need to be prepared to move beyond intra (church stewardship) to extra (church stewardship with focus) to significantly affect positive changes regarding the country's societal household food security.

This thesis is a humble attempt to contribute to the search for a life affirming, life enhancing and life preserving framework for empowering households with effective agricultural practices and food security in Zambia. The emphasis of this study will be

principle based. Relevant principles will, in other words, be used to analyze, interpret and evaluate the development phenomenon.

Unless people are challenged at the level of their beliefs, there will be no desired change in agriculture practices to ensure food security for the rural poor households in Zambia. It is important to act now, rather than later. This research has been outlined as follows:

1.11 STRUCTURE OF CHAPTERS

Chapter 1 serves as an introduction to the whole research process. It provides the road map according to which the whole work is presented in a systematic way. It is a framework for transformational community development. It introduces ways in which theology could be practically applied.

Chapter 2 gives an overview description of a just and sustainable food system. In this chapter it is argued that, if poor rural communities were to become food secure, governments and other stakeholders would have to engage themselves in developing policies and programmes to promote a just food system where food is readily available and accessible to everyone. This chapter further discusses ways of improving farming among the rural poor communities to achieve food security.

Chapter 3 discusses agriculture and food production in Zambia. The aim of this chapter is to present an overview of agriculture in relation to the household food security especially amongst the rural communities in Zambia which experience high levels of food insecurity.

Chapter 4 discusses the biblical and theological perspective of agriculture and food production. It presents an overview of Bible teachings on agriculture and food production by looking at agriculture and food production from both the Old Testament and the New Testament perspectives. This is aimed at discovering theologically how farming was practised from the theological point of view thereby; apply it to the current agriculture system to enhance food production.

Chapter 5 presents a theological ecclesiological framework of food security as discussed in Chapter 4 in order to guide the Reformed Church in Zambia (RCZ) and the Council of Churches in Zambia (CCZ) in their quest to participate in transformational development through the food security project in Maposa community and elsewhere.

Chapter 6 presents guidelines for empowering households through food security: Lessons from Maposa community. These guidelines will form the basis for the implementation of an ecclesiology of food security by Reformed Church in Zambia (RCZ), the Council of Churches in Zambia (CCZ) and Zambia in general.

Chapter 7 presents a summary of the research work as discussed in Chapters 2 – 6.

CHAPTER 2

A JUST AND SUSTAINABLE FOOD PRODUCTION SYSTEM

2.1 INTRODUCTION

The previous chapter presented a lay out and an introduction to the research topic under discussion and provided the methodology through which to explore the research topic: *A creative tension between spirituality and physical needs: A theological ecclesiological evaluation of the food security programme for the Council of Churches in Zambia*. This chapter discusses a just and sustainable food production system.

Agricultural development and food production have become important development objectives for most of the countries in Africa. These concerns have arisen as a result of the high levels of malnourishment that impact negatively on people's work performance and general quality of life. Deficient diets can lead to serious health risks or stunted growth.

The FAO report (2000) indicates that nearly one third of people in Sub-Saharan Africa suffer from chronic hunger. This is the highest proportion in any region in the world. Fighting hunger in Africa is largely dependent upon the success of the agricultural sector, especially among the small-scale farmers that comprise a vast majority of Africa's rural poor. Although the 'green revolution' of the mid-twentieth century introduced technologies that doubled and tripled crop yields in some regions in the world, African farmers did not experience similar gains.

FAO (2008) predicts that by 2015 there will be a shortfall of 25 million tons of cereals in the sub-Saharan Africa and the number of undernourished people could reach 205 million by 2050. This is why Sobel (1995) describes this as a world food crisis.

The International Food Policy Research Institute (2009) points out that, at present, one in six people worldwide suffer from hunger and malnutrition - a tragically high proportion. The reality is that many more are unable to sustain a healthy diet.

In addition to this, Adams et al. (2009) state that an estimated 1.02 billion people suffer from malnutrition due to problems in the production and distribution of food.

The World Bank (1988) indicates that food insecurity exists in countries with a past record of unsuitable micro economic policies and those with disrupted economies as a result of civil disturbances. Zambia is not excluded. Like many governments in Africa, it needs to develop more coherent strategies for sufficient food production because hunger has become a huge intractable problem for the nation. Zambia needs to resolve this problem of food insecurity for poor households in rural areas (FAO 2000) through large scale actions, pursued persistently over many years with adequate resources and skilled personnel.

2.2 A JUST AND SUSTAINABLE FOOD SYSTEM

A just and sustainable food system is one which ensures adequate nutrition for all people in a given context. Adequate dietary provision for all the people in the nation is the most elementary test of the moral legitimacy of any system that encourages the production and distribution of food.

Production and distribution of food are both critical to attaining distributive justice and to overcoming hunger in a country like Zambia. Food security, self-reliance and insurance considerations all contribute to presumptions regarding large scale dependence on external support. To act on this presumption requires major increases in output in the nation. Within the nation, the most effective way of increasing access to food for the rural poor is by removing barriers to or providing support for their access to land and other resources in order to grow more food for consumption and surplus for selling.

A just food system in a larger political economic system for a country should not only provide adequate food for all, but should also provide it in ways that respect human

dignity and enhance human fulfilment. This means that society should also be structured in such a way as to provide opportunity for all who are able to do so to earn their own food and thus be self-reliant. Particular food systems should thus be evaluated in terms of whether they increase or diminish this opportunity.

A just food system is a system that shares its bounties. There are moments in the lives of communities when sharing and giving become imperative despite all efforts at self-sufficiency. In this day, when the structure of agriculture is undergoing transformation in the whole world, nations should pay particular attention to the moral obligation to protect people from being deprived by others of their only means of subsistence which is agriculture (De Gasper 1981:40f).

Depriving self-reliant indigenous communities and small cultivators of their land or landless rural wage earners of their only source of employment, affects not only their right to obtain essential commodities for their livelihood but also elementary necessities. It is clearly self-defeating as well as morally unsound to ignore actions or processes which erode existing bases of support and then to ask how the victims can be effectively fed, unless policies are established temporarily as direct measures for eradicating of hunger sooner rather than later.

As justice demands arrangements in which all have equal opportunity to earn their daily food, so justice demands equitable access to resources needed for food production. In the agricultural sector, this means equitable access to land, water, seed, fertiliser, credit, markets and scientific knowledge. Equal concern for all persons demands unequal treatment in situations of inequality. Thus, justice demands preference treatment for small holder farmers.

Jansey (1995) argues that a just food system, be it locally, nationally or even internationally, means access to adequate variety of food. This must be seen as a basic human right. A just food system should encourage participation by all stake holders in agricultural activities in order to reduce unnecessary political pressure exerted upon poor farming communities. A just food system implies participation in production of food by all stakeholders.

2.3 DEFINING AGRICULTURE SUSTAINABILITY

It is vital to provide a conceptual setting for the definition of sustainable agriculture and to show evolutionary trends in its development. Beets (1990) notes two reference points that are not meant to be exclusive, but rather to represent a spectrum of thought.

The first reference point of sustainable agriculture is in the early 1980s with the emergence of the concepts of regenerative agriculture and articulation of a sustainable agriculture. The early concept of sustainable agriculture has evolved into a construct of agriculture based on principles of ecological interaction.

A second reference point is the increased use of the term sustainable agriculture. It was first used in 1987 to refer to a stable agriculture, involving all facets of agriculture and its interaction with society. The definition of the term sustainability in a general sense means continuity or be continued for a long time. The concept of sustainable agriculture has become a broad one involving multiple dimensions. It is important to be more aware of the potency of technologies, of the fragility of the earth's environment and of human beings' ability to disrupt it. A notion of the earth's limited resources should be observed. This is appropriate at the threshold of our transition from the age of alchemy to the age of biotechnology.

Sustainability had become something of a buzz word in the 1990s. It reflects, however, a growing concern for environmental protection and the ability to continue to sustain its inhabitants. There are many different views on agriculture sustainability and also the conditions and steps necessary to attain it. It is, for the purposes of this research, important to look at what constitutes a sustainable agriculture, what measures are needed to achieve agriculture sustainability and whether these are desirable.

Beets (1990: 40) define agricultural sustainability as the ability of a farming system to maintain productivity in spite of large disturbances such as repeated stress or a major perturbation. The best example of stress on the environment affecting productivity and sustainability is loss of soil through erosion. In the case of soil erosion, a lack of agricultural sustainability is normally indicated by a gradual decline in productivity.

Pretty (1999: 259), Huger (2005) and Altieri (1995) all define sustainable agriculture as farming that makes best use of nature's goods and services whilst not damaging the environment.

In addition, Caleste (1990: 2003) says agricultural sustainability implies profitable farming on a continuous basis while preserving the natural resource base. In other words, farming should be seen as a business and 'farming profitably' as taking care of the soil so that profitable farming is guaranteed year after year.

Elliot (1999) describes sustainable agricultural development as fundamentally about reconciling development and the environment on which the society depends.

In addition, WCED (2001:8) describes sustainable agricultural development as one which meets the needs of the present without compromising the ability of the future generations to meet their own needs. Nowhere is this more crucial than in the food system which is first and foremost a global biological system. Humans are today mostly dependant on agriculture for food and it is a necessity for survival, as argued by Tansey (1995: 9).

Besides what other scholars have said about sustainable agriculture, Pierce (1992: 305) says that if there is any agreement on the need for more environmentally positive agriculture to meet the nutritional and economic needs of the population, there is no single definition or goal for its achievement. However, Pierce defines sustainable development as the balancing of the need for agricultural development against the limitations of the environment, while ensuring the nutritional and economic wellbeing of society now and in future.

This being the case, many countries in Africa are caught up in a dilemma of whether to follow an agriculture strategy that seeks to maximise output through large infusions of industrial inputs such as the use of chemical fertiliser or one that seeks to maximise outputs or one that seeks to develop a more self-sustaining system that reduces reliance on expensive imports such as the conservation farming method as noted by Hansen (1986: 169-176).

However, Christen (1996: 363) in Williams (2001) explains that sustainable agriculture should lead to the following attributes:

1. Ensure inter-generation equity. This means that agriculture and food production should continue or is continued for a long time. Agriculture and food production must not be one generation activity but inter generation.
2. Preserve the resource base of agriculture and obviate adverse environmental externalities. This means involving the use of natural products and energy in a way that does not harm the environment.
3. Protect biological diversity. This means that agricultural should be used in such a way that nature is preserved and not destroyed.
4. It guarantees the economic viability of agriculture and food production enhances farming as a lifelong job opportunity and preserves local rural communities from being exploited.
5. Promote sufficient quality food for society. Sustainable agriculture enhances household food security.
6. It should contribute to the global sustainable development.

In addition, Shepherd (1998: 43) argues that there are three broad principles emerging to guide the technical search for sustainable agriculture solutions. According to him the emerging principles include:

- (i) Rejection of the industrial production methods and search for an effective one,
- (ii) Promotion of production and economic low external input systems, and
- (iii) Search for complementarities and synergy among the elements of the farming system, so that stability and productivity can be enhanced.

For food deficit poor rural communities in Zambia, the imperative is to maintain agriculture food production while preserving the underlying resource base. In this context, sustainable agriculture essentially means that crop production and economic gain will flourish over a very long, essentially infinite period of time (Chadwick, 1993: 31).

The practices which are referred to as sustainable agriculture are numerous and vary depending on the local ecology. However, a number of general practices are more or less common to all sustainable agricultural systems. The general practices of sustainable agriculture include: crop rotation, cover crops, no till or low till farming, soil management, water management, crop diversity, nutrient management, integrated pest management and rotational grazing. Sustainable farming does not always engender organic farming, but for purposes of this research it is important to assume that it does.

According to Pfeiffer (2006: 67f), organic farming is the most practical method of reducing the use of chemical fertiliser in crop production.

Sustainable agriculture means a return to small scale farming, where a small piece of land can be managed by a family using a horse or mule with a plough. Sustainable agriculture involves a close relationship between the farmer and the natural conditions that he has to work with. It looks at the climate and rainfall, tests the soil and looks at the slope of the land. Through close observation, the farmer is able to use nature to assist in working the land while taking care not to over use the land for food production.

Sustainable agriculture is nothing new. Throughout history traditional farmers have been forced to observe and understand nature in order to avoid the threat of starvation. Because there were no chemical fertilisers and poisons, they had to look after the soil, conserve water supplies and control pests naturally. Farmers understood that the cultivation of a variety of crops serves as a protection against drought, disease and other problems.

Sustainable agricultural development is a vital element in attaining, supporting and promoting economic development in any given country. An active and efficient agricultural sector is an essential pre-requisite of food security, economic growth and employment creation. However, the expectations of what can be done and sustained need to be realistic (Maddock 1994:1f).

Pretty (1995: 10f) like Maddock (1994: 1f) argues that sustainable agriculture aims to bring about an increased diversity of farming enterprises, combined with increased

linkages and flows between them. Sustainable agriculture makes the best use of nature's goods and services without harming the environment.

This research argues that zero tillage cultivation is having positive environmental impacts in some parts of Sub-Saharan Africa. Conservation farming causes minimal disturbance of the soil, retention of the residue mulch on the soil surface allows for a rational use of crop rotations. This approach is increasingly recognized as an essential part for sustainable agriculture (IFPRI 2007).

Harwood (1990:3-19) and Haggblade (2003, 2004) both argue that farmers who practice sustainable farming are able to cultivate a large area because they do this without moving or turning over the soil before they plant. Farmers who adopt conservation farming method will double their food production in the first year. In the seasons of poor rainfall, the farmer will still get a reasonable harvest. The researcher concludes that sustainable farming practice should be embraced by small holder farmers as a solution to food insecurity, because it benefits the environment. It also allows for the same land to be cultivated for generations. Farmers who practice conservation farming do not have to migrate and cut down virgin forests because they have exhausted the soil. Conservation farming does not rely on destructive methods of land exploitation.

De Gasper (1981: 5f) also argue that a sustainable food system needs to address the fragility and finite character of our ecosystem and the limits to our natural resources. Such a system should be based increasingly on renewable sources of energy and raw materials and should give particular attention to the conservation of land and water. Within such a system, it is important that people recognise that the earth belongs to the Lord, held in stewardship by them, and acknowledge the moral claims of the future generations.

Sustainable agriculture is important to small holder farmers because it ensures that resources are properly cared for and wisely managed. It conserves soil and water, so that the land can produce food or other crops for many generations to come. It is important to understand that unstable agriculture destroys resources because it works against nature (Philip 1995: 8).

On the other hand, Philip (1995: 7) argues that not all traditional systems of agriculture are sustainable today. A good example is that of the making of contour ridges each farming season. In slash and burn agriculture, forests are cleared to prepare fields for subsistent agriculture. These fields are planted with crops year after year until the land is exhausted. The farmer would then abandon the infertile field and start clearing a new piece of land while the forest grows over the old piece of land.

At present, Zambian land is becoming increasingly difficult to secure due to control measures put into place by the government and traditional authorities. The use of unsustainable farming methods is proving to be problematic for the small holder farmers who used to move from one piece of land to another after it had lost its fertility. Farmers now need to find ways of re-using land year after year without destroying its fertility. The land will only remain fertile if the soil gets fed adequately and is protected.

According to Philip (1995:7f), the following principles can be applied to uphold agriculture sustainability:

- (a) ***Respect the land:*** This means using land for the purpose for which it is suited. Land should not be abused but used properly so that it does not go to waste.
- (b) ***Conserve the soil:*** Organic matter such as compost manure or plant rubbish must be added to the soil. This can help degraded soil to become fertile again by stimulating biological activity.
- (c) ***Manage rain water well:*** Farmers need to understand that too little or too much rain reduces plant yields. Hence rain water must be managed well to increase plant yield.
- (d) ***Promote cooperation:*** Cooperation between the community and agricultural extension officers or agencies is important.
- (e) ***Encourage integrated farming methods:*** This means mixing crop farming with livestock farming as a good way to achieve inexpensive, low input farming. Manure supplies valuable organic material to the soil.

- (f) ***Increase productivity:*** To increase the productivity and sustainability of rain fed farming, farmers should go back to old, strong varieties of plants that can adapt to drought and give yields even in very dry years.

It is an indisputable fact that sustainable farming makes the best use of nature's goods and services whilst not damaging the environment. It does this by integrating natural processes such as nutrient cycling, nitrogen fixation and soil regeneration. It minimises the use of non-renewable inputs (pesticides and fertilisers) that damage the environment or harm the health of farmers and consumers. It makes better use of the knowledge and farmer skill, thus improving their self-reliance and capacities as pointed out by Madeley (2002: 42).

Goldsmith et al. (1990: 7f) raises an important point by saying that agriculture development has three distinct related dimensions which are essential for sustainability of agriculture and food production to bring about food security among small holder farmers living in the rural areas. The dimensions are:

- (a) The physical technical dimension. This dimension addresses land utilisation, agricultural technologies, research and extension, agricultural inputs, farm to farm market access, productivity and production maximisation.
- (b) Agricultural development from an economic financial perspective is concerned with costs, factors of production, terms of trade, pricing policies, subsidies, incentive credit, return on investment and market mechanism.
- (c) The institutional human dimension looks at knowledge and skills, organisation and management, training, implementation capacity, social relations, politics, communication, motivation, participation, local government, public private sector linkages, culture, values and historical experience.

A sustainable agriculture and food production system as discussed above should aim at achieving the efficient use of existing resources to provide adequate food for the whole family. Particular attention is required to ensure the optimal use of local resources and to eliminate waste and the over consumption of these resources. In order to meet the basic needs of the rural poor majority, the rich need to limit their consumption of the

earth's finite resources, curtail the pollution of the air, water and land and respect the sensitive balances of the earth's bio-system.

Goldsmith et al. (1990:7f) argue that sustainability often raises the immediate tension between respecting the environment and meeting basic needs. Calls for ecological sustainability are often not favourably received by persons from food deficit nations who struggle to achieve food security and to create development opportunities to lift themselves from poverty. This tension must be addressed in ways that guarantee justice by emphasizing the fact that the primary responsibility rests with the affluent whose consumption styles directly and indirectly create serious ecological threats. That responsibility includes sharing resources to overcome poverty.

According to Goldsmith et al. (1990:7f) many of the gravest instances of erosion, deforestation and desertification are found in developing countries and are the result of ineffective land and water management. The transfer of resources to complement local and national efforts to halt and reverse these processes is, in short run at least, as critical as food aid to establish a sustainable food system. Conservation farming is a good farming method for small holder farmers because it aims at making more efficient use of soil, water and biological resources and natural resources through effective soil, water and plant nutrient management.

According to UN/FAO (2002), food security exists when all people, at all times, have physical, economic and social access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active healthy life. Food security is not an abstract concept. The idea of having enough of the right food on one's plate instead of going hungry is very concrete. Working to achieve this goal is extremely complex and requires thorough and rigorous interdisciplinary research. It should be understood that nutrition, food security and the environment are intimately connected.

It is a fact that sustainable agriculture improves food security. In rural areas sustainable agriculture works best if small holder farmers are encouraged to work in groups (local food security committees) to which they bring a pool of ideas about farming, thereby enhancing agricultural activities within the community. In order to improve the quality of seed used by the small holder farmers, seed loan banks should also be provided by

the government to groups of farmers in the rural area in order to support them for sustainable agriculture. Small holder farmers can only meet the economic challenges they face in rural areas if yields improve and they have surplus crops to sell. Small holder farmers in rural areas should be encouraged to integrate crop farming with poultry farming so that they are able to manufacture their own manure and apply this to their fields to improve soil fertility. This is much better than using chemical fertilizers which destroy the soil and are expensive for the small holder farmers.

According to Raos (1987:46) the strategy for an increased food production potential in any given nation and place should involve around three major components of equal importance: soil, crop variety and management.

Soil

The wealth of the rural community depends on the fertility of its soils and how that soil is optimally used. The importance of soil as a dynamic system for crop growth can never be over emphasised. Therefore, maintenance of the soil structure and fertility should be encouraged by small holder farmers if food production is to be maximised.

Crop Variety

Variety of crop is the second strategy for increasing household food production. The development of new high yielding varieties has been a revolutionary achievement, especially for this century. This means that there is no justification for low food production with the high yield varieties available on the market. Farmers in rural areas should not grow recycled seed when certified seed is readily available in shops.

Crop Management

Management of crops include all agricultural operations from the preparation of the land to sowing and to harvest. A high yielding variety can only be high with proper crop management methodology. Crop management among small holder farmers is given less attention. This is an area that needs attention if sustainable agriculture is to be achieved by small holder farmers in rural areas like the study area.

2.4 HISTORY OF THE TERM FOOD SECURITY

The term food security has its origins in biblical times where it was used as an indicator of social challenges. It has undergone several developments and new meanings have subsequently been attached to the word (Kumwenda 2006:8).

According to Kumwenda (2008: 8-9) the international development literature of the 1960s and 1970s the term referred to the ability of the country or region to secure adequate food supplies for its current and projected population. Food supplies were measured as dietary energy supplies, and issues of distribution and quality of food supplies were generally considered. Since then a great deal of attention has been given to the concept of food security and its determinants within populations and at household levels. Food security (or its inverse, food insecurity) at household level has also been measured by means of large surveys. In addition, food security as a basic human right has been affirmed by a number of international conventions over the past two decades and elaborated upon in international legal literature.

Kumwenda (2006) observes that the current most commonly accepted definition of food security was promulgated by the Life Science Research Organization in 1991. It was defined as ‘sustained, access at all times, in socially acceptable ways, to food adequate in quantity and quality to maintain a healthy life.’ This definition can be operationalized at the individual and household level, and with minor modification can be applied to the whole population. The definition incorporates several concepts such as:

- Access (economic and social).
- Sustainability or secure of access.
- Availability of food supply, both quantitatively and qualitatively.
- Quality of supply to include nutritional adequacy and safety.

Defined in this way, food insecurity applies to a wide spectrum of phenomena ranging from famine to periodic hunger to concerns about safety or security.

The definition of food security noted above also recognizes that hunger is a process managed at household level. This means that many decisions and management strategies are used by households to ensure food security at the expense, where required, of other basic goods and services including medical care, education and in extreme cases, housing. Thus stated, food insecurity can be measured and graded in populations. At the present time measures of household food security are being incorporated into large national surveys and determinants and consequences of food insecurity are under active investigation in a number of cultural, ecological and other disciplinary contexts.

Osman (2006) argues that assuring food security for the world in the future depends on the large-scale issues of food production, processing and distribution, as well as issues of economic and social accessibility within populations. The FISU (Federation of International Scientific Unions) is suitably positioned to focus the efforts of the worldwide scientific community on ensuring that the basic human right to food security is met. Some of the scientific unions that form part of the FISU deal with natural and human resources in agriculture, genetics, food policy, economics, marketing, food habits and behaviour, and human nutrition. Not many other integrative agendas exist where the immediate urgency of food security issues can be discussed by the international scientific community.

The closely intertwined problems of poverty, hunger, environmental distress and population increase are challenges that need to be resolved. An increased effort to develop sustainable agriculture, particularly in the world's poor regions where agriculture is a main occupation, is vital to their solution. The FISU is in a position to define and implement a research agenda that is innovative, appropriate and effective. This task involves a shift in the research agenda (Osman 2006).

According to Devereux and Maxwell (2001: 3) the concept of food security has been on the international agenda from as far back as 1948, when the Universal Declaration of Human Rights affirmed the following: *'Everyone has the right to a standard of living adequate for the health and wellbeing of himself and his family, including food'*. Today, the definitions have changed. The main emphasis lies in a combination of issues regarding local food production, the availability of food on the table and access to

resources. The United Nations Food and Agriculture Organization (FAO) define food security as a condition in which ‘all people at all times have both physical and economic access to the basic food they need’ (Devereux and Maxwell 2001: 4). It involves access, above all, to natural resources: land, education, water, credit, seed supplies, technology and inputs; and access for women and children, which features in current policies for food security (Amalu, 2002) in Kalonga (2003: 24).

2.5. GENERAL FOOD SECURITY SITUATION IN SUB-SAHARAN AFRICA

It is important to note that periodical famines in Sub-Saharan Africa appear to have become increasingly severe. As a result, food emergencies have increased. This, according to the FAO report (2000) and Bryant (1988: x – xi), explains why one third of the Sub-Saharan population chronically suffers from hunger.

Moreover, during the 1990s, the absolute number increased from 173 million to 200 million people. Roughly two thirds of those receiving assistance from the World Food Programme live in Africa and Zambia is one of the countries included in this group. In 2001, estimates of the number of people suffering from food emergencies in Sub-Saharan Africa ranged from 23 million to 28 million. Delgado (1988:3) and Amalu (2002) in Kalonga 2003.

Shaw (1988) argues that, on average, diets in Africa provide 6% less energy than the minimum required for sustained healthy living. The current food supply situation in 22 African countries is so bad that over 150 million people may soon face hunger and malnutrition. This situation arose as a result of the structural weakness of African agriculture, low productivity and rudimentary agricultural techniques. This situation has resulted in insufficient agricultural growth and food production in the face of rapid population growth. This has led to serious food shortages and malnutrition on the continent.

Carr (1989) like Shaw (1988) argues that this problem of food insecurity in Africa is as a result of a confluence of factors over time. The FAO (2000) report indicates that agriculture in Africa faces huge challenges. Small-scale farmers, mostly from rural poor

communities, account for over 90% of agricultural production in Africa. African farmers face numerous obstacles, including ongoing civil conflicts, HIV/AIDS, vulnerability to natural disasters and insufficient investment in agricultural research and rural infrastructure. For these and other reasons, the technology of the green revolution did not transfer well onto African soil. For example, maize is a staple food in Africa accounting for over 50% of calories in local diets and it takes up around 90% of cropland in some countries. It is subject to drought and disease, including the maize streak virus, which destroyed between 5 to 100% of African farmers' crops in 2006.

In addition, Rosegrant and Cline in *Science Magazine Volume 302 No. 5652*, points out that the global food crisis will remain a worldwide concern for the next 50 years and beyond. Crop yields have in recent years decreased in many areas because of the declining investments in research and infrastructure needed to promote agriculture. The climate change and HIV/AIDS are also crucial factors affecting food security in many regions. Although agri-ecological approaches offer some promise for improving yields, food security in developing countries could be substantially improved by increased investment and policy reforms in favour of agriculture.

On the other hand, droughts and flooding are often the major causes of the food insecurity in African countries. Statistics showing where droughts have occurred and how they have affected agriculture and food security in some parts of Africa during the past ten years are presented in chapter 4.

Paradoxically, many people suffering from hunger are among those most intimately connected with food production. These include small holder farmers who produce only for consumption and not for sale. Therefore, if Zambia is to attain food security, agriculture will have to be given priority by the government. Food security in this case means access by all people at all times to enough food for an active, healthy life as stipulated by the World Bank (1986) in Williams (2001) and also Gittinger (1988: 195).

Saad (1999) also argues that a household is food secure when it has access to the food needed for a healthy life for all its members. Adequacy, according to Saad, refers to quantity, quality, safety and cultural acceptability.

According to Vearey (2009) food security refers to the reliable availability of sufficient quantity and quality of nutritious food for a population. Dimensions included in the concept of food security are availability, accessibility, utilization, preparation, storage and sustainability.

The FAO (1998: 1) further defines food security not only in terms of access to and availability of food, but also in terms of the distribution of resources needed to produce food and the purchasing power needed to buy food where it is not produced.

According to the RCZDD annual report (2010) food security is defined in terms of a household having enough food all year round. This should include maize, cassava, sweet potatoes, rice and one relish/vegetable such as beans, groundnuts or greens (See Appendix 13).

In the light of the definitions given above, it is clear that food security is a complex matter that involves more than simply availability of food. It is not an easy term to define, and the concept is treated differently in different contexts. According to the World Bank definition, food security entails the ability of individuals or a nation to access food on a sustainable basis. The World Food Conference of 1975 defined food security as the availability, at all times, of adequate world supplies of basic food to sustain a steady expansion of food consumption and offset fluctuation in production and prices. Maxwell (2001:14) in Williams (2001).

The researcher's focus is on progress in the reduction of poverty and food insecurity. The government and the church should combine efforts to resolve the current food problem in Sub-Saharan Africa. Often, dedicated individuals, government and the church needed to address the challenges regarding agricultural development. Champions are required to push the issues to the fore front of the public's consciousness, to demonstrate what can be done in the face of seemingly insurmountable challenges. Furthermore, the situation calls for the mobilisation of the political and financial capital to overcome inertia. The governments, the church and other stake holders should be proactive in addressing not only the causes of food insecurity, but also in exploring interventions that can overcome the causes of food insecurity.

In view of the above, the adequacy of food resources in terms of quality, quantity and cultural acceptability should also be considered when addressing food insecurity in Zambia. Adequate food requires improved food production at household levels and adequate economic and physical access to food. In addition, increasing food production, storage and trade can assure food availability, though this will not automatically ensure that all people have enough to eat and prevent hunger as viewed by Gillespie (1991:30).

It is a well-known fact that agriculture supports a large part of the population in most developing countries. According to the CSO (2010) statistics indicate that about 67% of the Zambian rural population depend on agriculture. However, modernization of technology, infrastructure and research are not tailored to support this large sector of the economy.

There is, therefore, a great need to recognize the fact that farming is an important form of employment and ensure that its rightful status is protected, like in the case of any other formal employment. Agriculture does not always receive the status that it deserves from both governments and its citizens and as a result the potential growth of this sector of the national economy is not optimally utilized.

For this reason, farmers need not only technical information, but also legal, economic and social information. Such information is essential to help farmers make informed decisions in their farming production enterprises.

Jansen (1983) argues that an integrated approach to rural development is necessary to address each sector of the Zambian economy. It should have strong links and support within its economic and social systems. Provision of basic infrastructure and services to farmers are critical to help the rural poor households boost their production capacities and contribute to food security. The government should have political will towards rural based farmers and give them the much needed support to attain household food security. Political will imply the government's development of policies that will promote a just and sustainable food system. A just and sustainable food system is discussed in the following section.

2. 6. PARTICIPATION IN THE FOOD PRODUCTION SYSTEM

A participatory food system requires sufficiently broad involvement, especially by the poor rural small holder farmers in the process of decision taking, resource allocation, production, pricing and distribution to achieve adequacy of supply and justice in distribution. In this process, the needs of the poor rural communities are to be considered first and the poor households must have the voice and organisational power to take and influence decisions.

Participation by the poor rural people should be consistent as they grow more food themselves to overcome hunger. A participatory food system is one in which national dependency and vulnerability is reduced by attaining national self-sufficiency in basic food stuffs to a maximum feasible extent. Food self-sufficiency offers a country protection against fluctuations on the international market and possible political pressure from food supplying countries. It is, therefore, an expression of national sovereignty and independence as pointed out by De Gasper (1991:41f).

As already noted above, the achievement both adequacy of supply and justice in distribution, requires that the needs of the rural poor households should be considered first. They must have the voice and organisational power to take and influence decisions and participate in the production activity. Rural poor people's empowerment in agriculture and food production means the expansion of freedom of choice and action to shape their own lives. It implies control over resources and decisions. Empowerment of the rural poor people entails the expansion of assets and capabilities of the poor people themselves to participate and negotiate with, influence, control and hold accountable institutions that affect their lives (World Bank 2003).

For the rural poor who have the potential for access to land, fuller participation in production is a priority. For the labouring rural landless fair participation in the fruits of food production must be made possible. Participation in productive employment or self-backed by equity in remuneration is essential if the urban and rural poor were to achieve equitable access to food resources. Participation on various levels is necessary to help poor people overcome hunger by growing more food themselves and by generating more income to buy food. Neither food rationing nor permanent

institutionalisation of stamps and free food allocations should be regarded as just ways in which the poor participate in alleviating dietary needs.

However, market mechanisms should ensure that poverty and hunger become much less prevalent and that distributive justice and participation are encouraged. They allocate funds on the basis of effective demand, not human need and the demand for food of the landless. The jobless hungry are not served effectively through these mechanisms. Intervention in the production of food or in employment or non-market access to food is and will remain necessary. In a participatory food production system people engage in meaningful food production to guarantee food security.

2.7 FOOD PRODUCTION AND FOOD SECURITY

Producing sufficient food to adequately feed the constantly growing population is becoming a big challenge in Africa and Zambia in particular. A greater effort for food production is needed if the country is to escape the ‘Malthus’ prediction of 1798. According to this prediction mankind is destined to experience external poverty because population growth will continue to outrun the expansion of food production and other necessities. Unless sustainable food production measures are introduced and enhanced, the Zambian population, especially small holder farmers living in the rural areas, will continue to experience the threat of food insecurity. Thomas Malthus, writing at the beginning of the 19th century, said that the survival of the population was, in the long run, determined by food availability (Hungate 1979:1-17).

The Zambian nation needs to prioritise food production as an immediate and primary goal. There is currently, despite the availability of vast areas of land, no mass production of crops. Instead, this vast agricultural land is being lost at an accelerating rate due to erosion, deforestation, desertification and other soil degradation processes. If the extent of the current degradation continues to increase, this will continue to impact negatively on the production of grain as the staple food for the nation. Grains are essential if the nations are to feed their growing populations (Vanloon 2005:107).

According to Marwaha et al. (2000) a call to increase food production in the developing countries where food shortages are so rampant and an introduction of modern

technology in the production and processing of agricultural produce are essential. This has become necessary as a result of the shift from farming for survival and growth to the value added agri-business approach.

High productivity is an essential requirement for a nation's sustainable agriculture. There may be debate about what is necessary for life and what constitutes a good living, but, besides providing sufficient food for an adequate diet, agriculture as an occupation should also be seen as a way to improve people's lives in the areas of education and health care. Agricultural productivity is an essential and vital goal for any national economic development and for this reason the government should devote its attention to promoting growth of the agricultural sector. To address the growing food deficit of the nation, a multi-faceted and integrated approach to food production is needed.

2.8 FAMINE IN RELATION TO FOOD SECURITY

According to Tilmon (2002: 5) famine refers to severe shortages of food generally affecting large numbers of people. The causes of drought can be both natural and also manmade. Natural causes of severe food shortages in Zambia and elsewhere include drought, floods, earthquakes, insect plagues and plant disease. Beside natural causes, there are also human causes which include wars, civil disturbances, sieges, deliberate crop destruction, poverty and inefficient food distribution.

The immediate consequences of famine are weight loss in adults and retarded growth in children. The children affected with chronic malnutrition will remain physically and mentally impaired for life even if they survive. This high rate of malnutrition has serious implications for any country's development prospects. In a country like Zambia, children's nutrition and health problems are primarily caused by insufficient food, a lack of dietary diversity and a poor health environment. The nutrition and health status of children can be a direct indicator of the wellbeing of the household. It further reflects on the community's nutritional status and is also widely regarded as an important basic indicator of welfare in an economy (CSO 2004: 144).

Famines have occurred periodically since ancient times. Most researchers list about 400 famines in history. An estimated 10 million people died in India in 1769 and 1770. A

similar number died in the famine of 1877 and 1878 in Northern China. In the 20th century the Sub-Saharan Sahel region of Africa has been struck with famine several times (Tilmon 2002:5).

The introduction of relief organizations for aid of famine victims is a fairly recent development. Organizations such as Red Cross and private and religious agencies have provided relief to most governments of developing countries. The establishment of the United Nations Relief and Rehabilitation Administration was followed by the creation, in 1945, of the Food and Agriculture Organization (FAO) of the United Nations (UN).

In recent years, major famines have occurred in Africa and some of these may lead to further food crises in the next few decades. In the present context in Africa contributing factors to poor food production have included: drought, desertification, poor soils, rapid increases in population and inadequate attention by some governments to food production. Famine in Africa has also been most severe where wars or civil unrest exist, such as in Chad, the Southern Sudan, Ethiopia, Mozambique and Somalia (Tilmon 2002:6).

In the early 1990s the world was producing more than adequate food for the 5.3 billion people on the planet and it was believed to be capable of growing enough to feed the population projected for the first part of the 21st Century (Tilmon 2002:6).

In view of what has been discussed above, the researcher argues that eliminating famine and reducing malnutrition requires not only people starting to practice sustainable agriculture and food production, but also taking into consideration food distribution, consumption and families practicing family planning. The Bible has also recorded various incidences of famine. The following section discusses in detail famine in biblical history.

2.9 AN INTEGRATED UNDERSTANDING OF FOOD PRODUCTION

The complexity of Zambia's food problem and related issues demand a multi-faceted and inter-diplomatic approach. This should be done while taking into account individual

factors and relationships. A food policy, which involves a national food strategy, national food scheme and national agriculture and nutritional plan, constitutes an integrated policy approach to food production, distribution and consumption. This encompasses the broad economic and social policies and reforms that affect the wider distribution of income and people's access to food (Vanloon 2005:107f, Jansen 1983).

Vanloon et al. (2005) argues that agriculture involves three classic factors of production, namely: land, capital and labour. Land must be utilised in such a manner that it can sustain production forever, unless alternative food production sources become available. The constant and intensive use of soil can lead to land loss, land degradation and soil erosion. These are major concerns, especially for the Zambian nation.

Land degradation is an insidious process and not always easy to observe. Land is destroyed by over cultivation, over grazing and also eroded by wind and water. These effects are the results of farming practices and economic pressures on land. Farming methods which intensify production and which involves the exploitation of the soil's fertility without replenishing it or by exposing it to erosion without introducing the necessary safe guards are long term threats to agriculture sustainability. Land is the primary asset for agriculture and a source of power. Food scarcity levels increase as a result of bad land management. This food scarcity often exists in spite of the availability of abundant land for agriculture production, especially in Zambia (Lapper 1982: 21).

According to Lapper (1982), the barriers to the expanding of food production capacity are in most cases physical rather than social. The point of argument is that, whenever there is injustice and undemocratic control over productive resources, growth in food production is inhibited. Many prominent writers have contributed to a better understanding of issues regarding food production with the aim of improving the current situation.

Lapper (1982: 22) argues that in Western countries where people suffer from hunger, large land holders control most of the land while others remain landless and unable to engage into agriculture productivity. In Africa, population growth threatens to destroy

the environment, making it very difficult to engage in agricultural production and contribute to food security. Therefore, a system that promotes the proper utilisation of land must be put into place in order to enhance agriculture and food production.

Terrant (1980: 47) states that agricultural production has a number of characteristics which distinguish it from other production sectors of a country's economy. This has made it necessary or expedient for governments to intervene. One discerning characteristic of agriculture production is that it is the result of activities of a large number of individual producers. In the simplest of economic terms, most forms of production take place in circumstances where a producer's action may modify the market significantly and where there are few actions on the production side. Increasing food production can ensure food availability, but this will not automatically ensure that all people have enough to eat and thus prevent hunger.

Van Zyl (1992: 18-71) argues that food availability is influenced largely by factors such as the agricultural practices employed by a country and its policies related to agricultural exploitation.

The physical potential of food production is dynamic and not static. As technology advances, so does the physical potential to produce. Most frequently mentioned techniques to increase food production additions to drainage and irrigation or the development of improved varieties and fertilisation (Sherman 1979:93).

Unlike other scholars, Wilcox (1976: 35) examines food production from the traditional perspective. Wilcox says that food production in the traditional system is built on the effective steering of information, a genetic stock of crops. This system may be referred to as folk science or ethno-science.

2.10 FOOD PRODUCTIVITY POTENTIAL

In recent years, there has been considerable interest in exploring the relationship between land availability, its production potential and food requirements. Various scholars have given their views on food production potential in the agricultural sector.

Bear (1990: 27-28) argues that even if the whole world continues to provide low levels of technology for the improvement of agricultural productivity, Third World countries will still be able to produce more than they can consume, provided that all potential land is brought under cultivation. If the generally accepted population projections are used, the developing world could, under favourable conditions, be able to feed itself in the 21st century.

Vanloon (2005: 107), for example, observes that the potential of maximum net productivity of a section of land depends on several factors, including the following:

1. the crop being grown
2. the nature of the soil
3. the temperature
4. the duration and intensity of water availability

It should be noted that for different crops in various parts of the world, varying potential for maximum yields exists.

Beets (1990: 44) argue that, because of the food shortages in Africa and the need for national and regional self-sufficiency, it is necessary to raise agriculture productivity.

The major pathways of raising crop productivity according to Beets (1990; 27 – 28) include the following:

- (a) Expanding the crop production area.
- (b) Raising the yield per unit area of individual crops.
- (c) Growing more crops per yield per unit area.

The strategy for an increased food production potential should involve three major components of equal importance: soil, crop variety and management.

Raos (1987: 46) suggests the following contribution to agricultural production potential in under developed countries:

- (i) **Soil:** The wealth of a nation depends on the fertility of its soil and the manner in which that soil is optimally used. The importance of soil as a dynamic system for crop growth can never be over emphasised. Therefore, maintenance of the soil structure and fertility should be encouraged by the general population if food production is to be maximised.
- (ii) **Crop variety:** Variety of crops is the second strategy for increasing food production. The development of new high yielding varieties has been a revolutionary achievement, especially during the past century. This means that there is no justification for low food production with high yield varieties available on the market.
- (iii) **Crop management:** Management includes all agricultural operations from the preparation of the land to sowing and to harvest. A high yielding variety can only be high when proper crop management methodology is applied. Unfortunately, some aspects of crop management have been given very little research support by most hunger prone countries like Zambia and maximum production potential has, consequently, not been achieved.

Most small scale farmers believe that to increase food production means to increase land usage. This is not always desirable, especially when forests are being cut down at an alarming rate in Zambia resulting in soil erosion and desertification. There is a need to maintain the present forest area and at the same time increase food production. Besides this, the growing population is also threatening most forests in Africa.

2.11 FOOD PRODUCTION INDICATORS

According to Vanloon et al. (2005) indicators can be designed that measure the productivity of one or more crops grown on defined areas of land using particular

agricultural management practices. It is important to remember that productivity is gauged by measuring productivity yield from a single field in a single year. This is of particular importance to the farmer who has limited measurements in terms of overall agriculture sustainability. On the same area of land and on a yearly basis variations in climatic and other natural and management conditions frequently result in yield variations. Vanloon et al. (2005) points out the following food production indicators:

2.11.1 Monetary indicators' of productivity

To measure food productivity, Vanloon indicates that there is a need to establish indicators that will measure the monetary factor. One strategy for designing such indicators is to measure the income productivity related to a particular crop. This will provide information about the economic potential of the crop in a particular area. Alternatively, the indicator could measure the profitability of all the crops on a farm or group of farms. In calculating income productivity, net values (crop value less the cost of production) should be used. Once again, individual farmers may wish to obtain this information on a yearly basis for their own individual holdings, but a study of sustainability within defined areas would require that the information be averaged from many farms and possibly over a number of years.

2.11.2 Multi-cropping

This indicator relates to measures of productivity in fields where a single crop is grown. Single cropping is, of course, a common practice in many agricultural systems. The advantage of monoculture on a field scale lies in the relative ease with which various agronomic operations (ploughing, cultivating, sowing, weed control and harvesting) can be carried out. In most cases, highly mechanised systems require that a single crop is planted in a given area. Mono cultural agriculture can also be productive in the conventional sense of providing optimal yields of typical field crops. A broad field of wheat or rice, well maintained, weed free and showing lush growth, gives an impression of excellent agriculture practice. Evaluation of gross productivity in these situations is a relatively straight forward process that involves measuring the weight of the crop and calculating yield based on the known field area.

With all its advantages, growing single crops over large areas can be a contributor to serious environmental problems. Having a very low level of crop diversity is especially problematic in terms of pest and disease control. The single species and variety of plant

may become an attractive host for specific pathogens, while the lack of other species means that there is no appropriate niche area where neutral or predator species can reside in close proximity. As a consequence, in monoculture agriculture, a farmer will rely extensively on chemical control methods to cope with pests or disease problems. In order to maximise yields, it is often considered necessary to supply these requirements largely or exclusively by readily calibrated chemical means (Vanloon et al. 2005: 107f).

Breth (2002: 1–12) points out that an enormous food crisis currently exists in sub-Saharan Africa. Agriculture should therefore receive priority attention in this region to ensure higher social returns for food deficit households. Because many food insecure people are rural dwellers and are engaged in some form of agriculture, priority must be given to increasing agricultural production among such rural poor dwellers.

In addition, Byerlee (1997: 3) argues that increased food production has a vital role to play in enhancing food security, peace and democracy in Africa in the 21st century. Various interventions are needed to improve food production, such as increased use of fertilisers and improvements in intercropping system. Innovative initiatives are needed to eradicate poverty, stimulate economic growth and empower rural households to ensure that Zambia as a nation can be set on the path of sustainable development and participate effectively in the regional and global arena.

This can be achieved by increasing mass awareness campaigns among the small holder farmers to practice a sustainable multi-cropping agriculture system. To this effect, mass media has an important role to play in agricultural development and the food production industry for a country like Zambia.

2.12 THE USE OF MASS MEDIA IN FOOD PRODUCTION

Mass media can play a pivotal role in improving agriculture and food production. Mass media can be used to distribute information to those involved in agriculture and food production. Food production can increase and reach acceptable levels if only stakeholders in the sector can be informed about the new technologies that enhance production and productivity. The role of information in agricultural development cannot be overemphasised.

Traditionally and for a very long time, field extension officers employed by the government through the Ministry of Agriculture and Cooperatives have been providing this information to small holder farmers in rural Zambia as part of the extension delivery services. To improve the current system, these extension workers need updated information on various agricultural activities and new technologies. Therefore, the extension service officers should be oriented in modern agriculture so that they are able to deliver relevant information to small holder farmers to take care of the current situation. The approach should be participatory and include private sector participation. The other information service delivery institutions should also use different channels of information dissemination to compliment the (person to person) method by extension officers. If the food production industry is provided with correct and modern information by the media, the industry can produce enough food to prevent hunger (NAIS 2002:12F).

Radio programs can be an important source of updated agriculture information for both the extension workers and the farmers. To promote radio use in agricultural extension and information system, it is necessary for the government of Zambia to take some measures to increase radio set ownership in rural communities such as duty exemption for radios and provision of credit facilities. The establishment of community radio stations should be encouraged by government because such stations have great potential to strengthen the rural information system. They can transmit more localized and relevant programmes in the local language of a particular area.

It should be noted that in order to improve information flow to rural communities, information delivery to extension officers needs to be more focused and strengthened. An improved mechanism has to be established through which agricultural field extension officers can be kept up to date with information at all times.

Printed materials could be also used more strategically for this purpose. The main object of this exercise is to make sure that agriculture and food production is self-sustaining as an on-going activity for the nation.

If the media does its work of disseminating appropriate information to small holder farmers well, the end result will be improved crop yield and agricultural sustainability.

Agricultural sustainability is an assured way of guaranteeing food security, especially in hunger prone communities which are, in the case of Zambia, the rural areas. Sustainable agriculture and food production are vital in enhancing household food security. In this case, small holder farmers need to understand exactly what sustainable agriculture involves.

2.13 CONSERVATION FARMING

Conservation agriculture is a farming approach that aims to make more efficient use of the soil, water and biological resources and natural processes through improved soil, water and plant nutrient management. Conservation agriculture involves the recycling and restoration of soil nutrients and organic matter and the optimal use of rainfall through the retention and use of biomass, moisture and nutrients. One key aspect is the retaining, where possible, of a permanent soil cover which implies zero or minimum tillage and often entails the use of green manure. Conservation or organic agriculture requires systematic inter cropping (planting different crops on one piece of land) and cropping sequences. Not only does it improve and especially stabilise yields in risky environments, but it also reduces production costs including costs of farm labour and farm power due to the reduction or elimination of tillage.

Both Seshamani (1997: 46) and Hall (2001: 52) argue that conservation farming will only be successful if it involves the following important precepts:

- (i) ***No burning of residues.*** The burning of residues is a very common practice among small holder farmers. In most cases they do this out of ignorance.
- (ii) ***Early planting of all crops.*** Especially with the current changes in weather patterns where rain either starts late and stops early or starts early and ends late.
- (iii) ***Early weeding.*** This is another important practice of a good farmer. Early weeding enables the crops to absorb all the nutrients necessary for growth because there is no competition with weeds.

As already pointed out above, conservation farming has more advantages to small holder farmers than the traditional farming method as the farmers are able to cultivate a large area because they are not moving or turning over the soil before they plant. Farmers who adopt conservation farming experience immediate, medium and long term benefits. Crop yields will double in the first year of farming.

In the seasons of poor rainfall, the farmer who practices conservation farming will still get a reasonable harvest. In the medium term, soil fertility will improve, weed populations will decline and the farmer will be able to make more money from cash crops such as cotton, soybeans, beans, groundnuts and sunflower. Since conservation farming increases yields so dramatically, farmers can reduce the area they cultivate and cope with weeding and other critical tasks.

According to NAIS (2006: 1-12) conservation agricultural is the best farming method for small holder farmers because it enables farmers to intensify their food production. It benefits the environment because the same land can be farmed for generations. NAIS also confirms the benefits of conservation farming as farmers do not need to migrate and cut down virgin forests because they have exhausted the land. Conservation farming is important as it does not rely on destructive methods of land exploitation.

Conservation farming makes use of natural processes rather than artificial fertilisers and pesticides. Artificial fertiliser and pesticides can remain in the environment and pose a threat to people and animals. Soil is kept in a good fertile condition through the use of natural wastes to make compost, while pests, diseases and weeds are controlled by natural biological means.

Judge (2002: 90) recommends that small holder farmers use organic farming method as it helps to increase long term soil fertility and helps to protect the land for future generations. It ensures that water sources stay clean and safe for human consumption and for the production of high quality crops. It uses cost effective resources which the farmer can control. The methods involve a combination of irrigation, companion planting and composting and soil conservation. The advantage of this farming system is that it makes farming very profitable. This view is also supported by NAIS (2006: 1-12).

2.13.1 Composting

If the soil is to continue to provide the nourishment needed by crop plants, it must be kept in a good condition and its natural nutrients need to be replaced regularly. Artificial chemical fertilisers cannot do this because they satisfy only the short term needs of the plant and do not feed the soil itself, so the next crop has to be fed with more, expensive chemicals. By returning natural wastes and animal manure to the soil, the farmer can improve the structure of the soil so that it retains water and feeds the plants more effectively, as observed by Judge (2002:92f). When vegetable and animal wastes are turned into compost, the residues are broken down by bacteria. This is a natural process and compost is very easy and inexpensive to make. It is an effective and long lasting way of improving soil and crop quality.

2.13.2 Soil Conservation

According to Judge (1992:92f) the soil can be better retained and losses through wind and water erosion can be avoided when farmers grow plants that binds the soil together. Such plants include banana plants and vetiver grass. Vetiver grass has been used very successfully for soil and water conservation in more than seventy countries. When fully established, a vetiver hedge will hold back surface water and trap any soil that is already being carried in the water.

Vetiver grass originally comes from India, where it is known as '*khuskhus*'. It is now used in more than seventy tropical and sub-tropical countries for soil and water conservation, land restoration and erosion control, low road maintenance and control of pollution. The vetiver grass system of soil and moisture conservation helps to catch the soil and water running off fields and slopes with hedgerows of vetiver grass planted on contours. Vetiver grass has stiff, dense leaves which stop the flow of water and soil and a strong and deep root system which prevents it from being uprooted by runoff water caused by heavy rainfall.

Vetiver grass takes longer to establish in arid areas with low rainfall but is resistant to drought. Once established, the vetiver hedgerows capture the top soil, preventing it from being carried off by rain water and from being lost to rivers, silting up lakes and dams and from ending up in the sea. At the same time, rather than channelling runoff

water into streams where it is lost to the crops, the hedgerows slow the runoff, spread it out along the length of the hedge while letting the water seep into the soil. The trapped silt builds up behind the hedgerow, forming a natural terrace held by the vetiver grass, which grows stronger in the accumulating soil.

The system is cheap and sustainable. The farmer can do all the planning and maintenance without expensive equipment or assistance and the only cost is the small scale farmers' labour. Soil conservation is a long term investment and farmers should not only look for immediate benefits but also the long term ones.

2.13.3 Uses of Vetiver Grass System

The vetiver grass is used to protect large areas of farm land from loss of soil. It could also be used to bring large areas of land, which had not previously been cultivated because of steep slopes, into safe food production because of its simplicity and low cost. It is used for restoring degraded and eroded land by halting the erosion and providing conditions for local plants to retain soil moisture while young trees are growing.

Judge (2002: 92) suggests the following advantages of the vetiver grass:

- (a) It can reduce erosion with a hedge that is just one plant wide.
- (b) It can survive in many different soil types.
- (c) It can grow in a wide range of climates and temperatures and survive all the forces of nature except in very cold and freezing weather conditions.
- (d) It is cheap, easy to establish and the hedges are easy to maintain.
- (e) It is easy to remove if it is no longer wanted.
- (f) It cannot be washed away because of its deep penetrating root system.
- (g) It does not become a weed.
- (h) It has many benefits as well, such as soil and water conservation, land restoration, bio-engineering and pollution control.

Other methods of retaining soil include building terraces on the steep slopes or using the gentler contours of the land to make flat areas. Rain water will rest in these areas until it has soaked naturally into the ground instead of running swiftly down the slope,

carrying away the surface soil. Another good farming practice which small holder farmers should embrace to enhance household food security is the agro forestry farming system.

2.13.4 Agro Forestry Farming System

Judge (2002:92f) says that this system is used on plots between 150 and 190 metres above sea level and involves growing maize, sorghum and beans interspersed with trees. The most common tree used is known as ‘*Musangu*’ tree. This is a scientifically proven nitrogen fixing tree which adds fertility to the soil (GART 2010). In this farming system, Farmers clear old vegetation by hand with machete and do not burn it.

According to GART (2010) the agro forest farming system has many advantages which include the following:

- (i) It provides a double yield for small scale farmers.
- (ii) Less labour is required to establish and maintain the plots.
- (iii) The soil retains moisture better, enabling crops to withstand regular drought and the risk of erosion and landslides is minimised.

2.13.5 Soil Stabilisation

The fertility status of soils in several parts of Zambia is generally poor. This situation significantly contributes to low production levels of maize as Zambia’s staple food. Low soil fertility status is usually caused by poor farming practices such as conventional farming on inherently unproductive soils. According to Golden Valley Agriculture Research Trust (GART 2010) soil fertility could, however, be restored by small holder farmers through the use of sustainable farming systems such as conservation agriculture.

Judge (2002: 94) also argues that bad weather conditions are responsible for the removal of 75 billion tons of top soil from farm lands in Africa each year. As traditional farming practices break down or are replaced, the rate of soil erosion increases. Forests are being cut down, unsuitable slopes are being cultivated and land is being overgrazed without appropriate methods to conserve soil. In many areas the lack of sufficient water

to produce crops is caused by uncontrolled runoff water which also carries away the earth.

Though conservation farming has yielded good results wherever it has been adopted, poor crop management after harvest has affected food security. Hence, it is important that crop storage has to be improved upon to avoid harvested crops going to waste.

2.14 FOOD STORAGE

One of the most important factors to consider in agriculture and food production is food storage so that undesirable changes to the produced food do not occur. The preservation or the prevention of damage to food after harvest has always been one of the major problems of human civilisation (Chambers 1997: 19 and Adams 1977).

The very laws of nature make this an inescapable problem. In most cases of food spoilage, micro-organisms are responsible. Not infrequently, however, spoilage may be caused by the action of enzymes in the absence of microbial growth. In a few instances, atmospheric oxidation may be involved. Any of these factors may be acting alone or in combination with others (Jacobus 1951: 11).

Brennan (2006: 1) argues that storage of food at all points of the food chain (from production to consumption) is vital if agriculture and food security is to be realised. The objective of proper storage of food is to maintain the quality of the produced food and reduce spoilage. The main factors which govern the quality of stored foods are temperature, moisture, humidity and atmospheric composition.

Storage, handling and processing methods radically affect the proportions of harvested foodstuffs which ultimately get consumed. At the present moment, faulty handling methods result in huge losses of produced food, especially grains, vegetables and fruits. Food losses resulting from the action of micro-organisms and insects are greatly increased under conditions of warmth and high humidity. Therefore, it is absolutely vital that food stuffs should be stored in a dry and preferably cool environment and that they be properly dry themselves before being stored away.

Simple storage sheds in the tropics must be so designed that they exclude rain and vermin. They also need to be well ventilated to allow for the free percolation of air, otherwise a drop in the temperature of the outside air can cause damaging condensation. Fluctuations in indoor temperatures can be minimised by ensuring the adequate insulation and ventilation of the roof. Control of humidity within storage buildings can be achieved by installing air conditioning apparatus.

However, Lowry (1970: 100f) disapproves of this method of food storage as too costly for general use in underdeveloped countries.

Dowa 1996 (285 - 296) also argues that considerable food losses or wastage are incurred, especially in developing countries, as a result of premature harvesting. Most vulnerable small holder farmers who are desperate to make money to enable them purchase the basic necessities end up harvesting their produce prematurely. Tropical crops which are often cut off before it has sufficiently ripened include oil palm, Coconuts and Cassava. The losses resulting from such pre-mature harvesting only become apparent during the processing of the foods, in the form of the waste products or products which are unsuitable for human consumption.

Dowa (1996) further indicates that most of Africa's crops are lost at times after the harvest. This is as a result of ineffective handling, storage and heat. Most of the small scale farmers store their crops in small granaries. The solution to this problem lies in the construction of better and modern storage facilities that can withstand the test of time. Local and modern storage facilities which small scale farmers should adopt include the following, as suggested by Dowa:

1. **Granary:** These are storage facilities which are constructed using local burned bricks and are suitable for poverty stricken areas. People can mould bricks using the local resources. To build such a storage shed, the small scale farmer puts the bricks directly on gravel covered soil or on a rock. The final structure is covered with a thatched roof which does not allow water permeation. Such a facility should have the storage capacity of two to three tons. These facilities are air ventilated to provide protection for stored foods against dampness, insects and rodents.

2. ***Mud storage facility:*** This is an airtight grain storage facility made from clay. This facility is simple in its construction, low in cost and it has the potential to significantly decrease post-harvest grain losses. The building materials include mud and straw. The finished silo needs to be roofed with boards, straw, reeds or other waterproof materials. No great expertise is needed to construct such a facility.
3. ***Traditional grain storage systems:*** This storage system has evolved over many generations and is used for safe storage within the limits of the local culture. Many different types of traditional storage facilities are used in Africa and in other parts of the world. Although the basic concepts may be similar, the appearance and methods of construction of the stores vary considerably according to local customs.

According to Cathie (1987: 29) the containers are, for the most part, made of the plant materials, mud or stone. It is often built on a raised platform and provided with a thatched roof. Small quantities of seed grain may be kept inside the farmer's house store in containers such as baskets, clay pots and guards. Sacks and small oil drums are also quite widely used. The type of grain store is usually determined by the local cropping pattern.

The type of grain store is often determined by the local cropping patterns. For example, in areas where two or more crops are grown, the farmer requires only a relatively temporary store capable of holding sufficient grain to last until the next harvest. However, in areas where rainfall is unpredictable and crop failures may be common, there is an obvious need to provide more permanent facilities for long term storage. (See Appendix: 12 Traditional storage facilities).

Drying of crop is a vital pre-storage stage, especially in humid areas, since moisture may be the most important factor determining whether and to what extent grain will be liable to deterioration during storage. Often, a special structure is provided to allow for drying of crops whilst affording some protection. The traditional method of storage has proven to be a very reliable means of storage because of the proven record of minimal losses of stored crops (Adams 1977).

Adams argues that a traditional storage system has its own unique way of insect control to prevent crop loss. Commonly used traditional methods of getting rid of insects include: mixing of sand or wood ash to provide a physical barrier to pests and the use of aromatic plant materials as repellents. It is important to realise that such traditional insect control techniques are usually specific to a particular region or community and that attempts to introduce techniques from elsewhere have been unsuccessful, either because the practice has been unacceptable socially, or because the techniques failed to give adequate protection under local conditions. Traditional storage systems face many challenges in a world of changing agricultural realities.

2.14.1 Challenges of traditional storage system to modern agriculture

Dowa (1996:285f) argues that, although the traditional storage system has been used effectively in some regions, modern agricultural systems pose a big challenge to this storage system. The challenge is the introduction of improved crop production which includes the adoption of new yielding varieties and multiple cropping techniques. These affect the traditional capability to conserve grain and increase the risk of loss. Not only has the increase in production placed a strain on the farm level storage capacity, it has resulted in a serious post-harvest problem, especially for small farmers.

Some of the new high yielding varieties can grow outside the normal growing season, allowing two or sometimes three crops per year. The unfortunate consequence is that farmers sometimes have to harvest in the pouring rain instead of during a cool dry period. In such cases, limited traditional resources and experience make it difficult for farmers to cope adequately with the problems of having to dry, thresh and store grain under adverse weather conditions. Qualities of traditional grain varieties (normally hard endosperm and good husk cover in maize) help to protect the grain from insect attack. Although the high yielding varieties possess improved nutritional value, some characteristics have unfortunately been introduced which render them more vulnerable to spoilage. The grains are often softer and extremely susceptible to insect attack (Dowa 1996: 285f).

In addition Cathie (1987: 27 - 31) argues that loss and deterioration of grain during storage may occur because of the following factors:

- (i) The condition of the grain received into storage is unsatisfactory.
- (ii) The storage itself is unsatisfactory.
- (iii) The management of the store is inadequate and unfavourable conditions are allowed to develop.

Carr (1989: 33 – 34) like Cathie points out an important precaution regarding storage facilities when he says that improvement of storage structures as a means of reducing loss has been the subject of attention in many tropical countries of late. Sometimes it is possible to introduce relatively simple adaptations to traditional structures. Even with the improvement of the storage structures, there is still a need for reliable and effective methods of pest prevention and control during the storage period. Since the traditional ashes and dusts seem unable to provide a satisfactory level of protection to the hybrid varieties of grain, the farmer could turn to the highly effective and safe insecticides which have shown promise in the experimental studies, but in practice serious drawbacks arise.

The other precaution, according to Carr, that small scale farmers should consider before storing their produce is to ensure that:

- (i) ***The grain is dry enough:*** Insufficient drying leads to spoilage of stored crops. Dampness fosters moulding, sprouting and decay that render grain inedible. Drying grains before storing them is, therefore, vital.
- (ii) ***Killing storage insects:*** The need to protect Africa's stored food from insects is particularly important, especially today. The large grain borer feeds on stored maize, cassava, wheat, sorghum, sweet potato, peanuts and other foods. The destruction of the large grain borer is devastating. To control them, pesticides should be used.
- (iii) ***Mineral dust:*** Mixing trona dust with maize grain kills or inhibits the biological activities of the most ubiquitous pest of the stored maize, the maize weevil.

According to Cathie (1987:29) good storage must begin with cereals and legumes entering the store in good condition, but deterioration of the grains can begin even before harvest or during the stages of harvesting, threshing, drying or transportation of grain to store. Fungi and bacteria may attack grains, especially in wet harvesting conditions and rodents and birds may attack the standing crops leaving damaged grains which are susceptible to attack by insects and micro-organisms in store.

The timing of harvesting has a significant effect on the subsequent deterioration of grain. Premature harvesting will result in a large proportion of immature grains that, because of high moisture content, will deteriorate rapidly in store. On the other hand, if harvesting is delayed too long then the moisture grains may be attacked in the field by insects, micro-organisms and animal pests and may be physically damaged by cracking as a result of repeated wetting and drying. This happens, for example, when rain or dew is followed by hot sun.

It is frequently necessary to dry the harvested grain again to safe moisture content for storage. This will inhibit growth of micro-organisms or limit the development of insects. Care must be taken to avoid rapid drying or over drying as pointed out by Cathie. This may result in cracked grains leading to more rapid deterioration in storage. The grain itself may have properties unsuitable for long term storage through deficiencies in the seed coat or the endosperm.

Deterioration during storage caused by the principal agents, micro-organisms, insects and vertebrate pests is influenced by the storage environment. A farm grain store should be structurally sound and waterproof, but this is not sufficient to prevent deterioration. The growths of micro-organisms occur when grain is exposed to high humidity and the seriousness of insect infestation tends to increase at higher temperatures.

Cathie (1987:29) implies that a well-designed store will, therefore, include features that afford maximum protection against the more obvious forms of deterioration caused by rain and ground moisture, limit high humidity and high temperatures and provide a barrier to insect and rodent attack. When the requirements for such a safe storage have been fulfilled, deterioration may still occur if the store is poorly managed. Reservoirs of

insect infestation will persist if grain residues build up through poor standards of store hygiene, or if infested produce remains in store from one season to the next.

Makinda (1991: 6) in agreeing with Cathie says that a better and more secure storage of food is one which does not call for a revolutionary solution. Already existing technologies just need to be improved upon to guarantee good storage. Storage, handling and processing methods of produced food is a very vital component to national and household food security. Faulty handling of the produced food results in huge losses, especially of vegetables, fruits, animal products and fish. Food losses resulting from the action of micro-organisms and insects are greatly increased in the presence of warmth and high humidity. It is therefore absolutely vital that food stuffs should be stored in dry and preferably air ventilated storage sheds and that grain be properly dried before being stored away (Lawry 1970: 100).

Sherman (1979: 217) presents a valuable contribution on food storage by saying that farmers should be aware of the fact that food production varies substantially from year to year due to weather patterns. Farmers should, therefore, be skilled enough to respond professionally in food storage mechanisms. A deterioration of results follows from the inter-relationship among physical, chemical and biological factors which may act differently under certain climatic conditions. Therefore, a complete understanding of the principles by which the environment influences the components of grain is the key to planning strategies which will prevent grain damage.

It is clear from this explanation that small holder farmers, private traders, exporters and importers of grain will hold some stocks in the absence of a government storage programme given the uncertainties with regard to future supplies and prices. Storing grain, while preventing quality and quantity loss, is based upon the recognition of the characteristics of the grain itself and of the grain in bulk.

Chemical control and/or physical means which render those conditions unsuitable for insects and fungi are common. The selection of either of these methods is highly dependent on the grain, length of storage, structure and economic limitations. The use of a particular storage regime is governed by local or national considerations and based mainly on the availability of the highly skilled grain storage personnel and proper

storage facilities. Government should be able to strengthen national post-harvest institutes, encourage training programmes, develop storage management and introduce improved storage technology. Coordination efforts toward improved storage by the state will ultimately lead to a reduction in losses and an increase in the standard of living of millions of people.

In cases where government holds substantial food stocks in order to guard against catastrophic disruptions in supply, considerable attention must be paid to storage policies. Given the severe economic constraints faced by most small holder farmers, the Zambian governments can ill afford inefficient storage regimes in their quest to assist those rural poor people to be food secure. Quality assurance is of particular importance in the application of food storage techniques. This means the guaranteeing that food stocks, when mobilised under crisis conditions, are of prime importance. In such cases, a usable quality control approach is essential. The prevention of defects must always be compared with providing defective supplies to consumers. Defects should be prevented only to the extent that the benefits of the prevention measures exceed costs. Attention must be adopted that minimise defects or, alternatively, inspections may be conducted in order to identify and replace defective stocks.

Meller (2002: 3 - 8) categorises three types of food storage facilities and these are:

- (i) **Working stocks:** These types of storage facilities are held by producers, consumers and traders.
- (ii) **Emergency stocks:** These storage facilities are put in place by the state to cushion catastrophe.
- (iii) **Buffer or stabilisation stocks:** These are very large storage facilities managed from one year to another. These facilities are run by governments and big agricultural marketing companies.
- (iv) Greater savings of produced food could be brought about if GRZ, in the case of Zambia, could install simple but effective drying and storage facilities in villages of backward rural regions for use on a cooperative basis by farmers in the adjoining country side. One effect would be to greatly increase the market quality of stored foods, especially of those

which are harvested in the rain season. Simple storage sheds must be designed in such a way that they exclude rain and vermin but are well ventilated to allow the free percolation of air. Control of humidity within storage buildings can be achieved by installing air conditioning apparatus, although this method may be too costly for general use.

The losses of produced food resulting from such premature harvesting, only becomes apparent during processing. For effective preservation, grain must be harvested dry after ripening in the field. Wind and sun may help with the drying process at the time of harvesting, but a small scale farmer must then shelter his or her stored grain to prevent it from being damaged by weevils.

2.15 CONSTRAINTS TO FOOD SECURITY

Rainfall variability on a time scale from days to years is as much a characteristic of the climate as the total amounts recorded. Agricultural drought occurs when the water is insufficient to cover crop growth or livestock water requirements. There are occasional widespread and severe climatologically droughts but also invisible drought which is caused by environmental degradation. Drought in Africa affects up to 80% of the total crop area. Drought whether minor or major always creates impact.

2.15.1 Defining drought

In Africa, drought is not a new phenomenon. Drought brings a lot of suffering. Drought is sufficient condition for famine but it is often the final trigger prompting large scale starvation and death. There are 4 different ways in which drought can be defined and these include the following:

- **Metrological** – departure of precipitation from rainfall.
- **Agricultural endesh** – less moisture in soil to enable crops grow.
- **Hydrological** – less water below the ground surface.
- **Socio economic** – refers to shortage of water for people's well being.

2.15.2 Rain patterns in Africa

Africa has a long history of rainfall fluctuations of varying lengths and intensities. The worst drought is that of 1910 which affected east and western Africa. The period 1960 – 1993 had experienced different conditions from year to year in Africa.

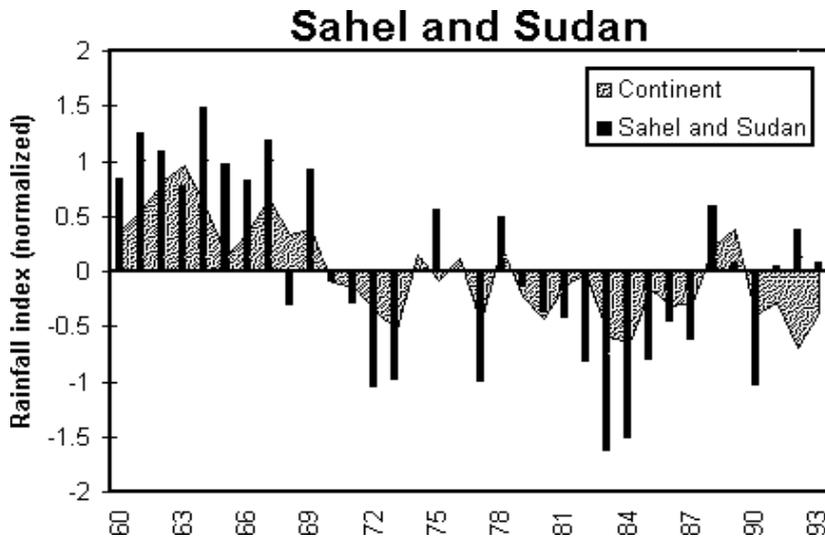
- 1960 – 69 recorded wettest of the period.
- While the 70's to 80's recorded lower rainfall.
- Drought of the 1984 was more severe than that of 1973 – climatologically.

2.15.3 Drought in Zambia

Zambia is a country in Southern Africa that has seen more than its share of troubles. Drought after drought has brought starvation and poverty to the Zambian people, especially those living in the rural areas. Zambia's farmers are now getting used to dry spells. Seasonal droughts have become an annual occurrence. In recent years, the droughts have become longer and more frequent.

In addition, Foster (2009) observes that during the 1992 drought that hit Southern Africa, Zambia was no exception. The region's precarious food security situation attracted the world's attention. Foster says that, for example, in Monze district, Southern Zambia, in addition to the drought, a serious epidemic of East Coast Fever broke out among the cattle, which resulted in the deaths of a large percentage of the district's herds causing further impoverishment among some of the district's poorer households. This is the prevailing situation in Zambia, where food insecurity has become a household problem, especially for the rural population.

The following graph is an extract from the FAO (2009) agro-meteorology series working paper No. 9 shows '*Rainfall variability and drought in Sub-Saharan Africa since 1960. It explains the rain pattern in the Sahel and Sudan region*'.

Graph 1: The Rain Pattern in the Sahel in Sudan Region

According to the FAO (2009) this group is one of the driest and most variable in Africa. Runs of dry years and runs of wet years are a typical feature of the climate of the countries in this group where extreme years (either good or bad) are more likely than average ones.

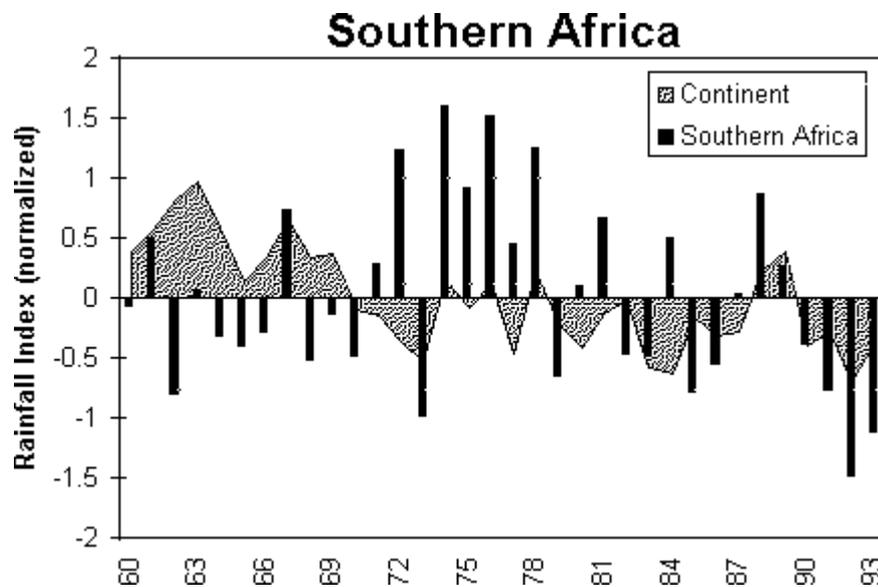
The group was characterized by a downward trend in rainfall until 1988, followed by a series of above-average years. Worst drought years correspond to 1983/1984, but severe droughts were also recorded in 1972/1973 and 1977. In 1984, drought severely affected all countries from Mauritania to Ethiopia, including several countries bordering on the southern edge of the Sahel. In contrast, Mali and Niger were more seriously affected than other countries in 1973 (FAO 2009).

2.15. 4 Sothern Africa Region

Countries of the Southern African region include: Botswana, Lesotho, South Africa, and Swaziland. The Southern African group has a relatively low rainfall index and a variability that exceeds that of the Sahel. There are some common features between this group of the Southern, Central and Madagascar region, for example, dry years in 1973, 1982, 1983 and 1992, but they also have notable differences, for instance between the years 1985 and 1993. The countries in this group were severely affected by the 1991-92

drought, which was the most severe after the 1981-85 droughts, the latter having been the worst since the 1920s (FAO 1996).

Graph 2: Rain Pattern in Southern Africa



Source: FAO (1996) working paper 9

What has been explained above is a broader perspective of droughts that have rocked the continent of Africa, creating a chaotic food situation and causing the deaths of millions of people.

2.15.5 HIV/AIDS and Food Security

HIV/AIDS has devastating effect on hunger throughout developing world.

The UN MDG's goals: goal No.1. Eradicating extreme poverty and hunger by 2015 and goal No. 6 Combating HIV/AIDS Malaria and other diseases should be addressed as a unitary force in order to achieve the MDG's by 2015.

HIV/AIDS is not just a health problem but also a nutrition problem. People who are extremely poor or foods insecure are more likely to be at risk of being exposed to the virus and of being infected than those who have enough to eat. Currently, food production in Africa and Zambia in particular is hampered by HIV/AIDS. HIV/AIDS threatens agriculture growth and household food security. HIV/AIDS has serious devastating implications as:

- Young and productive men die prematurely.

- Reverses human development.
- Worsens gender equalities – single parents headed households.
- Reduces labour productivity.
- Limits economic growth.
- Erodes the ability of government to maintain essential services in the country.

Furthermore, HIV/AIDS has the following consequences:

- Growth of child headed households.
- Incidences of grandparents caring for large number of own children off spring who died.
- Extended family burden of caring for orphans.
- Prevalence of the unfilled service posts following the death of others.

NAIS (2003) estimates 13% of all children in Zambia to be orphaned as a result of HIV/AIDS. An HIV/AIDS prevalence rate in the rural sector is expected to increase in a few years to come. This is as a result of their ignorance and traditional beliefs.

2.16 CONCLUSION

Chapter two argued that a Just and sustainable food production system is one which ensures adequate nutrition for all people in a given context. It has been pointed out that production and distribution of food are both critical to attaining distributive justice and overcoming hunger in a given nation. It was further noted that removing food deficit among the rural poor communities requires government to change its economic institutions. In this case government must prioritize agriculture and food productions at house hold levels to improve food security. It was also observed that food security can be obtained through the promotion of good agriculture practice. If small holder farmers are taught how to practice conservation farming and apply this technology well most of the rural small holder households will be food secured all year round. To a farmer, this will not be a onetime harvest but for many years to come as soils are conserved from wastage and they are replenished. The technology behind conservation farming is simple to follow and easier to use more especially on a small farm holding.

It is also important to note that Food security is also enhanced through good storage of the produced food. It has been argued in this chapter that most of the harvested crop by

the small scale farmers goes to waste due to poor crop storage facilities. It was pointed out in this chapter that there are many types of storage facilities which farmers can embrace in order for them to secure their harvested food and be food secured all year round. Such storage facilities as pointed out in this chapter are:

- Working stocks – these are held by producers, consumers and traders.
- Emergency stocks – these are held by the state.
- Buffer or stabilization stocks – these are large storage facilities holding national food reserves.

Furthermore, food security will be enhanced if the constraints to food insecurity are also addressed timely. There are many constraints to food security in Africa in general and Zambia in particular which include, global economic crisis, droughts, floods and HIV/AIDS. The problem to farmers is that the government reactions so late to these constraints as a result, it becomes difficult to address them once they come and it is a small scale farmer who feels the effects of such constraints.

In view of the above, the researcher is urging all stakeholders in Zambia that is the government and civil society like the church to uphold the notion of a just and sustainable food production system that will ensure adequate nutrition for all people in Zambia. The following chapter discusses agriculture and food production in Zambia.

CHAPTER THREE

AGRICULTURE AND FOOD PRODUCTION IN ZAMBIA

3.1 INTRODUCTION

Zambia with land area of 752 620 square kilometres, but the agriculture resources are underutilized with only 16% of the estimated 9 million hectares of arable land being cultivated. The demand for reasonably fertile land, relative to population pressure, is much favoured than most Zambia's neighbours. In Zambia agriculture provides for about 50% of the population and 67% of the formal labour, it remains by far the opportunity for income and employment for women who comprise 65% of the rural population (UNZA 2002:62). The performance of agriculture has to improve in order to fulfil its crucial role for development of the economy. Sector growth has failed to keep pace with that of the population for many years, its annual growth rate average only 2.5% between 1986 and 1995 according to UNZA.

3.2 THE AGRICULTURE SYSTEM IN ZAMBIA

Zambia's agriculture is predominately rain fed and irrigation is applied on only 6% of the potential area. Recurrent droughts and more recently, unusually heavy rains, sometimes result in widespread crop failure. However, even in the most severe drought year, rain is usually sufficient to produce economic crop of maize if soil moisture retention capacity is normal, the crop is planted in time and short maturing varieties are used. Recent crop failures have also been attributed to land degradation, poor husbandry practices and lack of appropriate seed variety availability. There is considerable scope of drought mitigation through the promotion of appropriate agricultural practices.

3.3 TYPE OF CROP GROWN IN ZAMBIA

The major crops produced in Zambia are Maize, Sorghum, Cassava, Millet, Sun flower, Groundnuts, Soya bean, Cotton, Tobacco, Sugar and a variety of vegetables. The total

planted area has declined by some 10% since 1990/91 and decline is mostly due to the reduction in Maize planting (UNZA 2002:62). The contributing factors leading to this situation have been significant loss of draught power (due to drought and animal disease) and an important shift in the economics of production reflecting unavailability of credit and removal of subsidies. Nonetheless, there have been significant increase in the total plantings and marked sales of groundnuts, mixed beans, millets and sorghum in the few years as most of the oil seed and small grain crops entail lower production costs and material inputs than maize. In effect, overall crop mix is shifting in response to comparative and advantage factors hidden by the previous regime of subsidies according to UNZA report 2002.

The breakdown of agricultural output in recent farming seasons clearly shows that the production of crops has deteriorated significantly. See table 1.below.

Table 1: Zambia: index of agriculture production (1989/90 =100).

CROP	YEAR								
	89/90	90/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98
White maize	100	97	34	142	90	65	125	82	58
Burley tobacco	100	N/A	68	162	70	101	112	61	N/A
Groundnuts	100	112	82	168	138	144	139	183	227
Sunflower	100	53	7	106	49	69	134	40	22
Seed Cotton	100	133	71	131	91	45	112	204	301
Mixed Beans	100	99	143	164	162	166	167	96	97
Sorghum	100	107	66	181	179	135	182	143	130

Source: CSO: 2000

Zambia has great potential to become a net exporter of agricultural product if only good agriculture policies are put in place by the government.

3.4 AGRICULTURE ROLE IN ECONOMIC GROWTH AND POVERTY REDUCTION

The agricultural sector is critical in poverty reduction and economic development of Zambian economy and will be the engine of growth for the next decade and beyond. Agriculture generates between 18% and 20% of Growth Domestic Product (GDP) and provides the livelihood of more than 60% of the labour force. It is the main source of income and employment for rural women who constitute 65% of the total population. Increase in income will therefore result in overall poverty reduction and increased food security.

3.5 THE AGRICULTURAL PRODUCTION SYSTEM IN ZAMBIA

Zambia has about 700, 000 farm households and these can be grouped into three main categories (UNZA 2002: 66).

- **Small scale farmers:** These constitute about 75% of the farm households in Zambia, operating an average farm size of two hectares, using family labour and simple hand tools. Their main activity is production of food and fibre crops and livestock, and this mostly for subsistence. Lack of cash incomes, appropriate technological packages and irregular supply of inputs are the major constraints affecting their activities. As a result, productivity of their crops and animals are very low. The existing small scale farmers in Zambia who are the majority in the farming sector presents a huge potential, which if mobilized with appropriate technological packages, can increase food production in Zambia, which in turn can improve food security and reduce poverty in the country.
- **Emergent farmers:** The 1997 estimates indicate that about 17% of the farm households in Zambia are emerging commercial farmers. They produce both for subsistence and for the market, using family labour, oxen or hired tractors and purchased inputs. Thus, given the supporting technical and advisory services

and improving the infrastructure, this group can greatly assist in reducing poverty and food insecurity.

- **Commercial farmers:** The balance of 8% of the farm households are medium and large scale commercial farmers with farm size exceeding 40 hectares. These farmers are along the line of rail or near major urban centres. Because of their favourable position, in terms of infrastructural and marketing facilities, they are the principle beneficiaries of the support services, public investments and imported agricultural inputs.

3.6 THE ZAMBIAN FOOD SECURITY SITUATION

According to UNZA (2002: 67) and the World Bank report (1996) Zambia's food security situation is very serious despite the occasional surpluses the country produces during the good crop years. It has become increasingly clear that Zambia is no longer able to feed itself.

As a result, chronic malnutrition (stunting growth) has affected about 45% to 47% of the rural households, whilst malnutrition (wasting) has afflicted about 6% of all rural households (World Bank 1996).

A fundamental issue that continues to be examined while we investigate what has gone wrong with food production in Zambia relates to the type of technologies and institution arrangements that are being promoted by the Zambian government to increase agricultural productivity. There is an implicit belief that traditional farming methods practiced by small holder farmers are partly to blame for food insecurity in the country. The fact is that small holder farmers can be food secure only if they are able to adapt to the modern farming methods which suit the current climatic conditions and do away with the unproductive traditional farming methods (UNZA 2002).

Mkandawire (1993) argues that in the Southern Africa Development Community (SADC) region there is still a thinly disguised contempt for traditional farming systems and technologies. Mixed cropping, for instance (a practice of growing two or more crops simultaneously on the same piece of land) continues to be condemned. Unlike in biblical times, farmers who continue to practice mixed cropping system tend to be

branded as conservative, ignorant, obtuse, lazy or not progressive. However, it is important to indicate that many researchers have now come to recognize that mixed cropping is a sophisticated and appropriate farming practice which should be encouraged among the smallholder farmers.

Mkandawire (1993) observes that the Zambian government still believes in the importance of Western technologies like the use of tractors, ploughs, high analysis fertilizers, modern seeds, while at the same time, the prevailing customary land tenure arrangements are supported. Traditional technologies, farming systems and tenure arrangements and other institutions continue to be perceived as pseudo-scientific, backward, primitive, valueless, crude, mistaken and a fallacious stumbling block to increased agricultural productivity. In Zambia, for example, the government of the day seems to pay more attention to large scale farmers than small holder farmers. There is no evidence to support the assumption that small holder farmers under customary tenure systems utilize their land any less efficiently or that they are hesitant to invest in land.

It is important to look at the wider spectrum of constraints (most of which are externally derived) that inhibit the small scale farmers to increase food production and become food secure as it was among the Israelites during the Bible history. One needs to look at both macro and micro-economic policies governing the food producing sector and how these policies impinge on agricultural productivity. For example, talking of urban bias in resource allocation and how this has affected small scale farmers in Zambia.

Mkandawire (1993) points out that the road networks and transportation in many rural areas of Zambia have deteriorated to such an extent that it has become a common occurrence that maize goes to waste in some districts every year.

A good road network is essential for increased food production because it will enable farmers to acquire farm inputs and also transports their commodities to markets. At the same time, they need finished goods to be transported to their areas in order to expand food production for the urban market (Lusaka Times: 2011).

It is now evident that if sustainable agriculture and food security is to be enhanced in Zambia like in biblical time, small holder agriculture will in future have to rely on a

thorough understanding of the local farming systems. They will require (systematic) research to increase rural infrastructure designed to improve the overall welfare of the small holder communities.

3.7 THE POLITICAL ECONOMY AFFECTING FOOD PRODUCTION

Professor Anderson, quoted in the *Post Newspaper* of 17 September 2008 (p.12), argues that the global food system is in disarray. Grain prices have more than doubled since 2004 and prices for most other foods have also increased significantly in Zambia and the world at large. Due to unsustainable management of natural resources, emerging negative effects of climate change and sharply rising prices for fertilisers and energy, the world has encountered the most severe global food crisis since the early 1970s.

What this implies, is that the national food systems exist in an international context. National food systems are shaped and constrained to varying degrees by the international economic environment. Therefore, a systemic understanding of the international economic dimensions is required to obtain a full picture of the dynamics of hunger which are separate from economic systems and income distribution. The national and regional food systems are part of the international food and economic system.

Therefore, to have a more realistic picture of the national food security situation, it is imperative for the government of Zambia through the Central Statistics Office (CSO) to take into account a number of important factors. This will enable them to arrive at an informed true picture of the food situation in the country.

Mkandawire (1993) suggests that the following factors should be considered by the government and other stake holders:

1. The government and the Central Statistics Office ought to have a clear identification mechanism to identify people who are food insecure. In order to have a broader picture, focus groups who assess household food security should include the following groupings: urban unemployed, casual laborers, landless agriculture workers, people in areas unfavorable to weather

conditions for agriculture and food production and people who are poorly served in terms of food transportation and marketing from other areas, pregnant mothers, lactating women, their babies and young children with special nutritional needs.

2. The government has to establish levels of food requirements for good health and nutrition for various groups of people in different areas, ages and occupation.
3. The physical availability of the necessary food to the needy should be examined, either through food production or purchase of food from others.
4. The resources available for people to produce or purchase necessary food should be looked at as well.
5. Lastly, it is important to see whether the available resources in the country are efficiently allocated and utilized so as to ensure optimal use of such resources, both at present and in the future.

A proper understanding of these elements of food security by the government through the Ministry of Agriculture and Cooperatives and also the Central Statistics Office (CSO) can lead to a complete analysis of Zambia's food security problem, especially among rural dwellers, which has reached alarming levels (Mkandawire 1993).

The argument here is that the agriculture and food security question is more than just an issue of food availability (the hunger question) or an issue of the quality and variety of food available (the nutrition question). Instead, one finds it strange in Zambia to have a widespread food insecurity problem side by side having plentiful good quality food in the country. This paradox is reflected in the nature of the food sources as well as the country's social formation. The point here is that the apparent absence of food insecurity problems at national level could hide a serious food insecurity problem prevailing at village level. The problem for Zambia is that the food insecurity problem in the country can take various forms and degrees of intensity (*Post Newspaper* 2008 page 12).

In order to provide a wider view of Zambia's complex food insecurity problem, various aspects of the country's political economy should be taken into account. This calls for an understanding of the forces that have shaped the country's macro-economic policies, specific agricultural policies and the various social groups in the country.

3.8 THE CURRENT FOOD PRODUCTION AND SECURITY STATUS

This section presents an overview of Zambia's agriculture production status in percentages as it stands at the moment. According to *Central Statistics Office* (2000), Zambia is geographically a landlocked country, covering a total area of about 752, 600 square kilometers, 1.6% is water, 7 % is uncultivated land, 40% is wild animal pasture land according to 2000 Census estimates. Zambia is situated on the great plateau of Central Africa. Its vegetation is mainly made up of savannah, woodlands and grassland. The country has a tropical climate with three seasons: the cool and dry season, the hot dry season and the hot and wet season.

The paradox is that little rain is experienced in the South where soils are more suited for food production. The heavy rains fall on the less suited acidic soils in the North. This paradox is the main natural constraint on Zambia's food security. The solution to this resource problem or resource constraint could be looked at in two ways. For the South region, irrigation (less dependent on rain) would be necessary to counteract rainfall shortage. Unfortunately, as observed by Mkandawire (1993), the current status of irrigation in Zambia is very negligible. The constraint of food security could also be affected by the high population growth.

3.9 THE IMPACT OF POPULATION ON HOUSEHOLD FOOD SECURITY.

Growing at the rate of 2.8 per cent per annum, Zambia's population is regarded as one of the fastest growing in the world. Having stood at about 4 million at independence in 1964, the country's population now stands at 13 million people as reported in the 2010 Census of Population and Housing. In relation to available land resources, the current size of the population should not be a serious constraint on food security at the national level. However, for some peasant communities along the line of rail and some parts of the Eastern province, farmland shortage is a real problem. Even so, this shortage is a

question of the prevailing socio-economic structure that has created unequal distribution of land between different social groups, rather than absolutely due to over population in these regions.

Historical findings reveal that migration of people from rural areas to urban areas has led to some parts of the rural population experiencing food shortages in Zambia. The reason is that such communities have lost the young male age group which was contributing to food production for the families. Mkandawire (1993) indicates that analysis of food insecurity should not be confined to the agricultural sector alone but also the socio-economic policies that have determined Zambia's development process and the country's food situation.

3.10 ZAMBIAN SOCIO ECONOMIC POLICY ON FOOD PRODUCTION.

Zambia became a colony of Britain at the end of the 19th century. During the colonial period, mining was the major industry run by the British South African Company (BSA). A number of copper mines were opened in Zambia and with mining being labour intensive; a lot of people from the villages around Zambia were recruited to work in the mines. The shifting of people from their own villages in the rural areas into the mining industries in the urban areas negatively affected the food supplies of many rural communities. Famine became the order of the day in the rural areas (Mwanza 1981).

Worse still, colonial agricultural policies in Zambia were formulated in favor of promoting the operations of the country's mining industry. Agriculture was practiced at a very small scale. Agricultural growth could not be achieved at the expense of labour needs in the mines. The major aim of promoting agriculture was to supply cheap food to the mine workers and not for individual food security (Badwin 1966).

The basic colonial agricultural policies kept Africans away from engaging in large scale agriculture production. Further still, white settlers received fertile land along the line of rail at that time, in Chipata in the Eastern province and Mbala in the Northern Province. This was the land taken away from the Africans who were resettled in infertile areas. Most of these people are still living in these areas (Mwanza 1981).

Leresche (1993) and Dodge (1977: 16-30) indicate that the end result of this relocation was that people became overcrowded in these areas resulting in over cultivation of the land. Soil became infertile and overgrazing led to soil erosion. The agricultural system was upset and the food security of these communities had been destroyed.

It is clear from the above discussion that the colonial socio-economic policies did not have food security for Africans as an important objective. If there was any colonial food security policy for the Africans, it must have been intended for the Africans who worked on the copper mines and other capitalist ventures in the country.

3.11 AGRICULTURE AND FOOD PRODUCTION AFTER COLONIALISM

Many people argue today that Zambia's agricultural policies since independence in 1964 have been based on a colonial legacy. Instead of pointing at a single explanation of the post-colonial agricultural policies and food security situation, this research will try to examine a wider spectrum of the post-colonial socio-economic policies and practices.

It is an undisputable fact that Zambia's post-colonial agriculture has evolved around the mining sector as was the case during colonial rule. In the same way, investment into agriculture, especially among Africans, was neglected during the colonial rule. The agriculture sector has until today received less than 15% investment by government in its post-colonial development plans for the agriculture sector (Kaunda 1962).

Due to less resource allocation by the central government to the agriculture sector, the level of infrastructure development in the agricultural sector has been negatively affected. In this era, without proper transport, marketing and institutional infrastructure, specific agricultural projects cannot succeed.

Zambia's post-colonial investment policies have also been focused more on the urban areas than the poor rural areas. This has resulted in a disproportionate share of the economic and social infrastructure put in urban areas at the expense of the poor rural population. As the rural population tries to have their fair share in these facilities, rural

urban migration has been high since independence in 1964, resulting in a high rate of urbanization. Actually, Zambia is regarded as one of the most urbanized countries in the world (World Bank 1990).

In the early years of independence, Zambia experienced a serious rural urban immigration resulting in a fall in small scale oriented agricultural production. A lack of social infrastructure in the rural areas pushed small holder farmers out of rural areas into urban areas. Education was no exception.

After attaining independence in the 1970's, the government tried to put up deliberate measures to invest more in the education sector so that youths could take up jobs even in the rural area. The government tried to train students in tasks related to farming like agriculture science in schools so that the youths could remain in the rural areas and take up farming as employment. However, this did not work up well as students opted for white collar jobs in town. The end result was the fall in agricultural output and food supply across the country (World Bank 1990).

This gloomy picture of agriculture and food production has contributed to most people being food insecure. This calls for the church today, like in the Bible history, to empower poor rural households with agriculture skills to enable them to grow enough food to feed their families. The church's contribution to food production is critical in Zambia today because the majority of people, especially in the outskirts, are wallowing in poverty. There is demand from the world bodies that Zambia's food insecurity can only be solved by introducing the GMO's in the Zambian agricultural system.

3.12 THE THREAT OF GMO's TO SUSTAINABLE AGRICULTURE

The introduction of GMO's as a solution to the current world food crisis has been a global debate. Most of the third world countries have introduced GMO's in their national food systems in order to avert hunger. Zambia is one of the countries being pushed by the global bodies to introduce GMO's in order to address the current food problem in Zambia which is as a result of agriculture failure. Both the government, civil society organizations have been on record rejecting the notion to introduce GMO's in the Zambian agriculture system. An important legacy of the rule of Zambia's third

president, the late Levy Mwanawasa was how, in late 2002, to the upset of some donors, his administration was firm in refusing foodstuff assistance which was based on Genetically Modified Organisms (GMOs) as reported by Gabriel Banda in the Post Newspaper of Friday 3 June 2011 (page 1).

In addition, the Jesuit centre for Theological Reflection (2007) carried out a study on the introduction of GMO's in Zambia. This study argues strongly that the introduction of GM crops to Zambia will have considerable negative effects and negligible benefits for the development of small scale agriculture on which the country's food security depends.

The JCTR report further says Zambia should follow the example of EU countries and exercise caution whilst promoting sustainable farming methods to small holder farmers. The paper makes a number of policy recommendations regarding the introduction of GMO's as follows:

- There should be no introduction of GMO maize into Zambia. The position initially taken by the Government regarding the rejection of USA GMO maize as relief food should be maintained.
- Very serious and extensive research should be immediately undertaken by Government, relevant institutions and NGOs regarding the health, environment and agricultural impact of GMOs and their potential risks.
- The National Biotechnology and Bio safety Policy currently being considered by the Government should be subjected to wide public discussion with full involvement of all stakeholders and critical study by Members of Parliament.
- Government should undertake immediate steps to build the capacity necessary for testing agricultural products to detect the introduction of GMOs. This requires greater laboratory facilities.
- Civil society should promote public education about GMOs in order to develop an educated citizenry that can reach conclusions that will safeguard Zambia's capability to build sustainable agriculture for the future.

GMO production works against nature's principle of variation and balance. Also, it may trespass and forcibly affect nearby non-GMO crop and plant life, thus disturbing the

ecosystem and balance of the whole world. Furthermore, production of GMOs may alter ecological and biological balance, contributing to extinction of some plant and animal species. They may affect vital bird life and the smaller birds (Post Newspaper 3 June 2011 page1),

3.13 CONCLUSION

Chapter three argued that Agriculture in Zambia provides for about 50% of the population and 67% of the formal labour, it remains by far the opportunity for income and employment for women who comprise 65% of the rural population (UNZA 2002:62). The performance of agriculture has to improve in Zambia in order to fulfil its crucial role for development of the economy. Sector growth has failed to keep pace with that of the population for many years, its annual growth rate average only 2.5% between 1986 and 1995 according to UNZA report 2002.

Zambia's agriculture is predominately rain fed and irrigation is applied on only 6% of the potential area. Recurrent droughts and more recently, unusually heavy rains, sometimes result in widespread crop failure. The major crops produced in Zambia are Maize, Sorghum, Cassava, Millet, Sun flower, Groundnuts, Soya bean, Cotton, Tobacco, Sugar and a variety of vegetables. The total planted area has declined by some 10% since 1990/91 and this decline is mostly due to the reduction in Maize planting (UNZA 2002:62).

The agricultural sector is critical in poverty reduction and economic development of Zambian economy and will be the engine of growth for the next decade and beyond. Agriculture generates between 18% and 20% of Growth Domestic Product (GDP) and provides the livelihood of more than 60% of the labour force.

Zambia has about 700, 000 farm households and these can be grouped into three main categories (UNZA 2002: 66).

- **Small scale farmers:** These constitute about 75% of the farm households in Zambia, operating an average farm size of two hectares, using family labour and simple hand tools.
- **Emergent farmers:** The 1997 estimates indicate that about 17% of the farm households in Zambia are emerging commercial farmers. They produce both for

subsistence and for the market, using family labour, oxen or hired tractors and purchased inputs.

Commercial farmers: The balance of 8% of the farm households are medium and large scale commercial farmers with farm size exceeding 40 hectares. These farmers are along the line of rail or near major urban centres.

According to UNZA (2002: 67) and the World Bank report (1996) Zambia's food security situation is very serious despite the occasional surpluses the country produces during the good crop years. It has become increasingly clear that Zambia is no longer able to feed itself. This solution to Zambia's food insecurity lays in the support of the small scale farming which make up over 60% of rural employment in Zambia. The government and the civil society organizations should work tirelessly in promoting sustainable agriculture in order to enhance household food production among the rural population.

According to the JCTR study (2007) it is pointed out that the introduction of GMO crops to Zambia will have considerable negative effects and negligible benefits for the development of small scale agriculture on which the country's food security depends. Therefore, it is recommended that Zambia follows the example of EU countries and exercise caution whilst promoting sustainable farming methods to small farmers. GMO's are not a solution to the current food crisis in Zambia but rather the promotion of sustainable agriculture. The church in Zambia should speak out strongly against the threat of introducing GMO's to sustainable agriculture in Zambia from a theological point of view. The argument is that GMO's are not the solution to the Zambian food insecurity situation but promotion of sustainable agriculture. The following chapter discusses food security from the biblical theological perspective.

CHAPTER 4

FOOD SECURITY VIEWED FROM THE BIBLICAL THEOLOGICAL PERSPECTIVE

4.1 INTRODUCTION

The previous chapter discussed a just and sustainable food system as a measure to enhance food security among the food insecure rural households. The researcher further argues that the government of the Republic of Zambia (GRZ) should develop policies in agriculture and food production aimed at answering the needs of the present generation without compromising the capacity of the future generation to satisfy their needs. It was also argued that the church's involvement in the promotion of sustainable agriculture can improve household food security amongst the small holder farmers living in the rural areas of Zambia.

Chapter 3 discusses food production and food security viewed from a biblical theological perspective. The argument in this chapter is that sustainable agriculture that enhances food security cannot only be attained technologically or scientifically; the biblical theological perspective also needs to be taken into account. It is imperative to investigate what God is saying regarding food production that enhances food security for the people of this century.

According to Devereux (2001: 13) the subject of agriculture and food production has been the topic of discussion for a long time now. The biblical story in Gen. 41: 1-57 of Joseph at the Pharaoh's court, predicting seven years of plenty followed by seven years of famine is an early example of agriculture and food security planning in practice. Some years later, the Israelites who fled from the Pharaoh through the desert were provided with manna from heaven. This has been cited by Prof. Sir Hans Singer as an early example of food aid.

Therefore, chapter 3 investigates food production and security during biblical times. This investigation provides information to guide the Reformed Church in Zambia

(RCZ) and in general the Council of Churches in Zambia (CCZ) in their quest in transformational development from the Zambia perspective. They will be able to apply these guidelines as they participate in food production and thereby contribute positively to address the household food insecurity. This could eventually lead to national and household food security in Zambia. As a matter of fact, the Bible - both the Old Testament and the New Testament - is not silent on the subject of sustainable agriculture and food production which enhances household food security. The Bible from the book of Genesis through to Revelations gives believers the mandate theologically to participate in sustainable agriculture and food production in order to improve household and national food security. Therefore, the following paragraph explores the biblical theological perspective of food security.

4.2 THE THEOLOGICAL ECCLESIOLOGICAL PERSPECTIVE OF FOOD SECURITY

This section focuses on the Biblical Theological interpretation of food production and food security from which the Council of Churches in Zambia should draw lessons as it participates in empowering rural poor households to improve their agricultural production and household food security status. This involvement should contribute to the national food security in Zambia.

From the Biblical point of view, food is important because it sustains human life. In the Old Testament, food as an image is representative of God's providence, sustenance of creation and a proper order of life (Prov. 12:11). The New Testament offers a more complex understanding as it highlights the tension between spiritual and physical food. The quest for spiritual food in the Bible is equated to the quest for physical food. In this chapter then, special attention has been given to physical food security as opposed to spiritual food.

In the biblical history of salvation it is possible to see the relationship between food and liberation on the one hand and food and the fulfillment of God's promise on the other hand. The whole history of Israel can be understood as a process of liberation and peace making. Even before the liberation from Egypt, God's action and guidance saved the people from starvation and death, as recorded in the story of Joseph and his family. As

poor wanderers in the desert, God's people experienced His faithfulness as they learned that God gives food not only through the laws of nature but also in His power. He does this to sustain life and this is done even through extraordinary events. For this reason, the land in the promised country was distributed for equitable food production in accordance to God's commandment.

When exploring the biblical view of food security, it would be imperative to begin by looking at the conditions of hunger (famine) in general and also at famine from a theological perspective. A better understanding of famine and hunger, both in a general and a biblical sense could help poor rural communities find lasting solutions to the low food production which has resulted in high levels of food insecurity in Zambia. When it comes to the issue of food production, it is important to put on theological lenses so that God is not distanced from it. If one reads the creation story in the book of Genesis 2 v.15f, it becomes clear that God is always concerned with the production food to ensure that people have enough food to eat and surplus to sale. The Garden of Eden, where man was placed, had food security. The Bible narrates that Adam did not lack anything in the Garden of Eden because God provided food. Famine and food insecurity in the Bible came about after their fall and their removal from the Garden of Eden. The issue of famine in relation to food security is discussed in the following section.

4.3 FAMINE THROUGH THE BIBLICAL HISTORY

The description of the economic causes of hunger in the Bible is helpful in shaping our understanding of the present world food crisis (Bible, 1984: Amos 8:4 -7). This chapter in the book of Amos can be interpreted within the context of social injustice in the Bible (according to which the rich grew richer by exploiting the poor small holder farmers who became landless laborers).

The Bible uses the word famine in a literal sense and not figuratively. In simple terms the word means lack of food or complete absence of food. Famine in the Bible was likened to poor harvests as a result of climatic variations. According to Gen. 12: 10 famine caused people to become nomads who needed to move from one country to

another in search of food. Abraham was a victim of this type of situation according to the book of Genesis (Ryken 1998:267).

In the New Testament famine is linked to chaotic conditions relating to the end time tribulation as indicated in Mk. 13: 5-8:

“Jesus said to the disciples, watch out that no one deceives you. Many will come in my name claiming I am he and will deceive many. When you hear of wars and rumors of wars, do not be alarmed. Such things must happen, but the end is still to come. Nation will rise against nation and kingdom against kingdom. There will be earthquakes in various places and famines; these are the beginnings of birth pains”.

The subject of famine also plays a critical role in the background to Jesus’ parable of the prodigal son in the book of Lk. 15: 14-20:

‘Jesus continued, there was a man who had two sons. The younger one said to his father, father give me my share of this estate. So he divided his property between them. Not long after that, the young son got together all he had, set off for a distant country and there he squandered his wealth in wild living. After he had spent everything there was a severe famine in that whole country and he began to be in need’.

General and biblical interpretations of famine are helpful in this research to explore further the link of famine to food production and food security viewed from the Biblical perspective. The next section discusses the link between famine and food security.

4.3.1 The Link of Famine to Food Insecurity

Famine is linked to food insecurity. Food insecurity means lack or absence of food and to guard against food insecurity food production becomes critical (Ryken: 1998:267). Until nations and individuals become proactive in food production, famine will remain a subject of debate in the years to come.

According to Nelson (1986: 4) the Bible’s description of the economic roots of hunger helps us to form a better understanding of the present world food crisis. The book of Amos 5:16-17, Amos 8 and Exodus 6 can be interpreted within the context of social injustice, in which the rich grow richer by exploiting the poor and small holder farmers

who become landless laborers. In the book of Amos in particular, hunger and poverty are not historical incidents, but the end result of the social injustice.

Nelson further argues that the people of Israel were exploited at both ends of the food production system. Farmers, because of the debts they owed and the injustices in the court, were reduced to landless serfs. They had their production taken away from them or were cut out of production process completely. At the same time, poor consumers could not contend with the monopoly and power of merchants. Land ownership was further concentrated in the hands of small groups. They dictated the pricing of their produce to ensure maximum profits at the expense of the landless poor people. According to Nelson (1986) Amos gives more attention to famine during the time of the Israelites (8th Century B.C) and his descriptions can help to shape our understanding of famine in our context today. The following section discusses famine during the time of the Israelites.

4.3.2 Famine as portrayed in Amos' Israel

Famine in Amos' Israel was a consequence of economic structures that resulted in great gaps between the wealth and power of the rich and the conditions of the poor. Once set in motion, these structures of inequality tended to be self-perpetuating. Merchants formed alliances with bankers, members of the court took bribes and the unjust prosperity of the urban classes spilled over into the coffers of the temple. The result was a mutually beneficial and cozy alliance, complete with economic rewards and religious ideology, which undermined the wellbeing of the poor. In Amos' Israel there would seem to be no hope for the hungry, short of the fundamental change in their economic and political position. Such a change would necessarily involve a redistribution of wealth and wealth producing resources. Unless the poor could rid themselves of the debt and regain control of productive resources, principally land, they would be locked in a state of permanent exploitation.

It is interesting to note that the biblical writers established clear provisions which, if enforced, could have prevented gross inequalities. Every seventh year was to be a Sabbatical year in which all debts were forgiven, all Hebrew slaves freed and land allowed to lie fallow to restore its fertility (Bible, 1984: Deut. 15:1-6, 12-18, Lev. 25:10).

Nelson (1986:5f) argues that the way to prevent inequalities in wealth and power is to institutionalize a leveling mechanism that returns productive resources to the people. The theological insight, on which the Jubilee tradition is founded, is that, ultimately, it is God who owns the land (Bible, 1984: Lev. 25:23-24).

The principle is clear: God created the earth and all it contains, for all people. According to the biblical principle, each person has the right to share the productive resources of society which God has made available.

While would not be correct to simply transfer the social setting of the Bible onto our present situation, it would be helpful to take note of Nelson's (1986: 5f) analysis of food production among the Israelite, based on the following points:

- (i) Foreign trade generally concentrated on the movement of luxury goods. While this was beneficial to merchants and affluent social groups, it undermined the position of the poor.
- (ii) Foreign trade was made possible by an aggressive foreign policy of the Roman Empire.
- (iii) Food was something to be exported, while poor people were left hungry.
- (iv) The growth of foreign trade led to a changed social fabric marked by increased urbanization and a centralization of wealth and power in the hands of a small group of people. Small holder farmers were a cheap labor supply. Some worked the fields and vineyards of their new overlords while others migrated to the city where they were exploited by the merchants (Bible, 1984: Amos 5:11, 8:4-5, Job 24:10-11).
- (v) With the demise of the small farmer, subsistence agriculture was undermined because production was geared to the needs of the rich. Land was valued as a location for the summer houses of the rich as a type of ancient 'tax shelter' (Bible, 1984: Amos 5:11, 6:6, 8:6).
- (vi) Monopoly control over the food supplies provided merchants with the opportunity to exploit the poor.

- (vii) The merchants were hungry for profits and resented the fact that the Sabbath and holidays were days of rest.
- (viii) The exploitation of the poor, which resulted in hunger and poverty, involved the complicity of variety of power groups, including merchants, bankers, government officials, members of the court and religious authorities. As a result, poor people were denied access to both the fruits and means of food production (Bible, 1984: Amos 2:6-8, 3:10-12, 4; 1-7, 5; 11, 7; 10-12, 8; 4-7).
- (ix) Hunger was a consequence of social injustice and not some fateful accident. As such, it was an affront to God and served as evidence that people were worshipping idols and not the liberating God of the Bible, according to Amos 3: 13-14, 5: 21-24, 4:4-5, Hos. 10:1 (Bible 1984).

4.4 THE OLD TESTAMENT VIEW OF FOOD SECURITY

According to Larsen (1977:14) food played an important role in biblical times. Larsen argues that in the Old Testament, food played a major role in the life of an orthodox Jew. The priestly tradition of the Bible (Lev. 17-26) is, according to the scholars, pre-occupied with holiness and has been dubbed the holiness code. This set of commandments is focused on purity to preserve the well-being of the community and land use. The commandments cover aspects of the community life concerning food, farming and many others.

According to Ryksen, (1998:117) the word bread or food in (Hebrew-*lehem*) is used throughout the Old Testament. Food is one of the many biblical images that, when traced through the canon, presents a picture of salvation history and biblical doctrine in microcosm. Food is also depicted as a sign of God's providence, sustenance for the weary, spiritual reality of faith in Christ and also eschatological messianic banquet.

Food was also a crucial issue in the biblical history for sacrifices and communality. The need to have stocks of grain in times of bumper harvests seemed to dwindle and had been receiving greater attention throughout biblical times. The earliest such instance so far recorded was the biblical flashback to the construction of stocks or silos by the

ancient Egyptians during the seven years of plenty to cover the foretold seven years scarcity as recorded in Gen. 42 (Bible 1984).

The Bible narrates in Gen. 41: 29-32 that God showed Pharaoh what He was about to do. There would be seven years of great abundance of food throughout Egypt, followed by seven years of famine. Then all the abundance in the land of Egypt was to be forgotten and famine was to ravage the land. The abundance in the land would not be remembered because the famine that followed would be so severe (Bible 1984).

What we find in the heart of Joseph's interpretation of figures from his pronouncement about the future is final, though he does not pronounce them as divine judgment. Joseph in this story gives a theological explanation followed by a clear recommendation as to what Pharaoh ought to do concerning the situation the dream carries than that given in the Bible (Bible 1984: Gen. 40).

According to Keck (1994: 621), the theological explanations punctuate Genesis 41. This is seen in verses 25, 28 and 32 of Genesis 41 which accomplishes three things:

- (a) They emphasize that God reveals the meaning of the dream to Joseph.
- (b) They indicate that God speaks through Joseph.
- (c) They provide the structure for the plan of action which Joseph was to disclose.

The verses which seem to reveal the plan (25 and 32) put much emphasis on the dream's identical meaning and its relevance. There is an introductory remark that God revealed to Pharaoh what was to happen and what steps he was to take. The hermeneutical grid hinges on the years of famine, the better to impress upon Pharaoh the need to make a strategic plan. 'Joseph offers more than just an interpretation.' Without waiting for Pharaoh's response and using bold speech, yet cognizant of his status, Joseph puts forward a plan whereby these events can effectively be addressed, preventing much damage to the country (Keck 1994: 33-36).

The king could not resign himself due to the disaster, because the effects of famine were not a matter of fate. This called for the king to make constructive decisions which needed to be God driven. In such a situation where a decision was to be made, Joseph believed that Egypt and surrounding nations could guarantee a solution that would bring the greatest possible well-being to all the people (Keck 1994: 621f).

Discernment played a role in the carrying out such a task. Plans were carefully articulated so that they could justify the end. Joseph's realization came into effect as he proposed that enough food was to be stored during the years of plenty to provide a reserve for the anticipated years of food insecurity.

What all this means in terms of the availability of food, is that in times of crisis, God can work even outside the religious spheres to re-correct the worsening situation. In the Egyptian story, God had to use Joseph, a stranger, to solve the problem in a foreign land. In as much as famine results from the failure of the Nile's waters to overflow and because it is seen a Pharaonic symbol of fertility, the situation calls into question the future of the king. The future, in this instance, determines the king's destiny and must dictate his life.

Keck (1994: 621) further says at that time, economic policies needed to be identified to maintain the virginity of the land. The dream has no impact on the future, but God's directive does have an impact and God Himself is the one who makes the dreams come true. The economic policies put into place in the times of plenty are to be utilized so that the land will not be consumed in the times of famine. What we see here is that God sets up a context that does not override human discernment, nurturing and planning. Although dreams and their God given hermeneutics do not necessarily shape the future, they demand a human response. Natural disasters have a predetermined efficacy. Reasoning humanity can overcome the negative implications they are trying to pause.

The Bible in the Old Testament (Ex 16:31 and Deut.8:16) reveals that, when the Israelites journeyed through the desert, they became hungry and that God sent manna from heaven to feed everyone. The Bible tells us that enough food was provided for all and they ate and were relieved from hunger and starvation (Ex 16:1- 32).

The Bible in Proverbs 12: 11 clearly points out that God desires for all people that they should have enough food to eat and therefore live. Growth in food production needs to meet the demands of population growth. That is God's mandate for His people. This is seen in Genesis chapter 15 which tells a story about Pharaoh and Joseph who prepared for the food deficit period by preserving enough food to cushion hunger.

In view of the above, it is observed that the Israelites implored good stewardship, especially where land was concerned. For example, they were keenly aware of how important it was to take care of the land in order to guarantee sufficient food production. These people treasured land because they knew it was a gift from God and they had a task to maintain its fertility for agriculture and food production.

4.4.1 The Old Testament and Land Use

This section surveys the role played by land within the long narrative of the Israelites in the Old Testament period. This is a narrative in which land at times almost takes on the role of a character in a plot.

Both Wright (2004:103f) and Hodson (2008) argue that there are two major complementary themes in Israel's theology of land and these are:

- Land is a divine gift from God.
- Land implies divine ownership.

According to Davis (2009: x) the descendants of Israel were given not a land, but the use of land, along with precise instructions for its good care. They could keep the land upon the condition of their obedience. Disobedience led them to be evicted from land by God. Land is never a human 'property' but as part of an infinite complex creation, both natural and divine, belonging to God. It is urgently practical because of the strict conditions of gratitude and care enjoined upon its users.

According to Guthrie (1970: 620), it is argued that in the Bible Israel owned the land through God's promise to Abraham and also through covenantal gift. Since the land belonged to Yahweh, he asserted moral rights over how it was to be used. This is so because land functions as a kind of covenant thermometer for measuring Israel's

relationship with God. At the economic angle, it functions as a gauge for how things are going at the following two angles – Israel’s life as a society and Israel’s relationship to God.

4.4.1.1 The Jubilee (Land Usage)

According to Keck (1994: 621f) the book of Leviticus 25 presents the clearest expression of the Jubilee or land use. In this text it is clearly stated that ownership of the land belongs to the Lord. The context of this affirmation is the regulations for the Sabbatical year and the Jubilee year. These are years in which the Lord’s sole true ownership of the land is acknowledged. This dual aspect of Israel’s theology of land (divine gift and divine ownership) provides a helpful way of classifying some of the basic principles that affected Old Testament ethics

The Jubilee (*yobel* in Hebrew) came at the end of the cycle of the seven sabbatical years. Lev. 25: 8 -10 specifies it as the fiftieth year, though some scholars believe it may actually have been the forty ninth year that is the seventh sabbatical year. Some scholars suggest that it was not a full year but either a single day as an event within the fiftieth year or an intercalary month after the forty ninth year, within the same calendar effect as our system of leap years (Keck 1994: 621f).

In the sabbatical year, there was to be a proclamation of liberty to the Israelites who had become enslaved by debt and a restoration of the land to families who had been compelled to sell it due to economic need some time during the previous fifty years. Instructions concerning the Jubilee and its relation to the procedures of the land and slave redemption are pronounced entirely in Leviticus 25. But this is also referred to in chapters 26 and 27 of Leviticus. It is an institution that has inspired much curiosity in ancient and modern times and in recent years it has come into prominence in the writings of those committed to radical Christian social ethics, according to Keck (1994:621).

Keck (1994:621) further argues that the Jubilee was in essence an economic institution which had two main points of concern: the family and land. It was rooted therefore in the social structure of the Israelite kingship and economic system of the land tenure

based upon it. It is also imperative in the study of the Old Testament to explore the paradigmatic interpretation of the Jubilee.

4.4.1.2 Paradigmatic Interpretation of the Jubilee

According to Keck (1994: 621f), the paradigmatic approach has to do with identifying the coherent body of principles on which an Old Testament law or institution is based and which it embodies or instantiates. It is observed that Israel's Jubilee paradigm plays a vital role for it speaks to God's people in the world today. Economically, the Jubilee existed to protect a form of land tenure based on an equitable and widespread distribution of land and to prevent the accumulation of ownership in the hands of a wealthy few. This echoes the creation principle that the whole earth is given by God to all who act as co-stewards of its resources. There is a parallel between the affirmation of Leviticus 25: 23, in respect of Israel, that the land belongs to God and the affirmation of the Psalms 24:1, in respect of all humanity, that the earth is the Lord's and everything in it, the world and all who live in it. A proper exegesis is required for Leviticus 25 so that it can be placed in the right context. The following section presents the exegesis of Leviticus 25.

4.4.1.3 Exegetical Outline of Leviticus 25 on Land Usage

This research supports Keck (1994:621) in his exegesis of Leviticus 25 which he outlines as follows:

- (i) Verses 1-7 open with the law of the Sabbatical year on the land. This is an expression of the fallow year law of Ex. 23; 10 -11, which was also further developed in Deut. 15: 1-2 into a year in which debts were to be released.
- (ii) The Jubilee in verses 8-12 is introduced as the fiftieth year to follow the seventh sabbatical year. Verse 10 presents the twin concepts fundamental to the whole institution, namely burden of debt and the bondage it may have entailed, return both to the ancestral property if it had been mortgaged to a creditor and to the family which may have been split up through debt servitude. Keck (1994; 621) observes that it was

these two components of the Jubilee, freedom and restoration, which entered into the metaphorical and eschatological use of the Jubilee in prophetic and later New Testament thought.

- (iii) Keck further observes that in verses 13-17 the financial implications of a recurring Jubilee are then spelt out. The apparent sale of a piece of land really amounted only to a sale of the use of the land. An approaching Jubilee therefore diminished the cost for the purchaser, in as much as he was buying the number of harvests until the Jubilee restored the land to its original owner.
- (iv) In verses 18-22 the exhortation is inserted to encourage the observance of the Sabbatical regulations by promising special blessing in the preceding year. The theological principle was that obedience to the economic legislation of Israel would require not prudential calculations, but faith in the ability of the Lord to provide through his control of nature, as well as through history.
- (v) Keck regards verses 23-24 as the central verses in Leviticus chapter 25 which constitute a heading to the remaining paragraphs as they are primarily concerned with how land was to be used economically and not abused by any persons. This was interwoven with the Jubilee.
- (vi) Verses 25-55 brings out three descending stages of poverty which required responses, interrupted by parenthetical sections dealing with houses in cities and Levite properties (verses 29 – 34) and non-slaves (verses 44-46).

According to Keck (1994) the stages of Lev. 25 verses 25, 35 and 47 are marked off by the introductory phrase '*if your brother becomes poor*'. This phrase probably introduced an original series of redemption procedures, unconnected with Jubilee.

According to Milgrom (2004) the basic postulate of the Jubilee is Leviticus 25 v. 23 where it is pointed out that land must not be sold beyond reclaim for the land belonged to God. Land in the text refers to Canaan and the instruction is for the Israelites. Israel

was to keep it in mind that the owner of the land is YHWH. YHWH was the land lord and Israel was the tenant. The background to this instruction was that each Israelite was assigned a plot of land that must always remain in its possession. Even when it is sold, it can be reclaimed, a process called ‘redemption,’ and every 50th year (Jubilee) it must be restored to its original owner. Cancellation of debts and return of forfeited land was also known in other civilizations of the ancient near east. The Biblical Jubilee, in contrast, was inexorably period and incumbent on every Israelite (Milgrom 2004: 298).

What necessitated the sale of land during the time of the Israelites? Leviticus 25: 25 – 28, 35 – 38, and 39 – 43 provides an answer to this question:

- (i) Verses 25 – 28 **Stage one:** *Sold land and its Redemption.* The assumed background to the directive is that an impoverished farmer takes out a loan for the purchase of seed in the event of crop failure; he is forced to sell part of his land to cover the previous loan and purchase new seed. Then his closest kinsman (redeemer) is required to intervene. The buyer must allow the redeemer to repurchase the land. The buyer is paid the value of the crop years remaining until the next Jubilee. In effect, the buyer has never even purchased the property; he has only leased it until the Jubilee. In this way he gets back his redemption costs and will not incur a loss. The redemption served a purpose of not alienating land from the clan of Israel to whom it was assigned by God.
- (ii) Verses 35 – 38 **Stage two:** *Lost land.* For this section, the underlying assumption is that the sold land was not redeemed. The owner incurs a crop failure on his now reduced property and is forced to take out a new loan, and again he defaults. This time he forfeits all his land, and he becomes a ‘tenant’ farmer for the creditor (falls under authority, v. 35). Technically, he has lost all his land, but the creditor must allow the farmer to try again: ‘let him subsist under authority’ (v.35), which means: lend him his required funds (increasing his indebtedness) but ‘do not exact from him interest (36). He may not be treated as a foreigner on whom interest may be charged. Since he pays no interest, the produce from land can be amortized his loan. Assumed is that if he cannot repay the loan, the land will return to him (or his heirs) at the Jubilee. The redeemer is not obliged to intervene in his case (nor the following one), since his redemptive duties fall only on sold land

(and persons) but not on indebtedness. Because of his indebtedness, the farmer has been forced to sell his remaining land, reducing him to the status of a ‘tenant farmer’ on his own land.

(iii) Verses 39- 43 **Stage Three: Slavery.** As at stage three, as well as stage two, the absence of provision for redemption is startlingly conspicuous, a fact that ribs the Rabbis confirm when they declare that relatives are under no obligation to redeem their indentured kinsman. Furthermore, it would not be true redemption. The redeemer might give him a free loan, an act of charity, but he may not hold him and his land until the Jubilee, which he could do where it is a case of redemption. The superior status of the hireling over a slave is manifest not only in his economic advantages but also in his working conditions. This is implied by the repeated admonition; “You shall not rule over him with harshness’ (vv. 43, 46). After all, the terms of the hireling’s labor are stipulated in advance, the slaves, in contrast, is subject to whims of the master. Considering that the hireling is a free person, it may well be that if he finds the creditor’s conditions too harsh or his wages too low, he can seek another employer.

Note that he returns ‘to his ancestral holding’ (v.41b). The significance of this clause rests on the supposition that the Jubilee cancels his entire debt. His restored land can now provide him with subsistence so that he need not fall immediately into debt and ultimately have to be sold once more into servitude.

It is striking that there is no mention of his wife in the discussion of the Israelite hireling. Milgrom (2004: 301) argues that one has to consider seriously the possibility that Leviticus deliberately omits any mention of the Israelite’s wife in order to make a legal statement: She does not exit the creditor’s service because she does not enter it. Here Leviticus is conducting a tacit polemic against Exodus 21: 7- 11 (and Deut. 15:12, 17): the wife may not be indentured. What then is the meaning of the emphasis provided by the repeated mention of the release of the children (vv41, 54)? There again Leviticus is waging a polemic against the earlier slave law, but this time verbally. Exod. 21:4 states that if the master provides the slave with a wife,

‘the wife and her children belong to the master and he is released alone. No, says Leviticus. Even if the master provides him with a wife, she is entirely free of the masters’ control, but her children, who are temporarily indentured, are released with her hireling husband at Jubilee.

To recapitulate: YHWH is Israel’s landlord and redeemer. Thus, as YHWH’s tenants and servants, Israel is doubly obligated to follow the deity’s laws. These include redemption and the Jubilee. If inherited land is alienated, the nearest kinsman (redeemer) is required to buy it back: if he fails, the land automatically returns to the owner at Jubilee: simultaneously his debt is cancelled, and begins his life anew. The redemption is not charity. The redeemer keeps the land until the Jubilee. His purchase price is thus covered by the land’s usufruct, and he will be inducted to redeem.

The Jubilee is a social economic mechanism to prevent latifundia (the loss of debtors ‘land to the creditor rich) and ever widening gap between the rich and the poor – which Israel’s prophets can only condemn, but which Israel’s priests attempt to rectify in law and practice in this chapter of Leviticus.

Besides what Milgrom says, Davis (2009: 92) argues that the most thorough application of the likeness between farmer and field is the laws of redemption (Leviticus 25), which treat analogous the enslaved farmer and alienated land and (associated with it) the 50th year of Jubilee have the greatest potential for creating widespread social change in an agrarian society, for their purpose is to prevent the opening of a gap between rich and poor with the establishment of a permanent, landless underclass. Leviticus 25 sets forth the practical consequences of Holiness traditions central theological tenet, that the people and the land of Israel belong exclusively to God (vv. 25, 55).

This exegesis of Lev. 25 reveals that land belongs to God and given to humanity as a whole so that from it all people should have an economic benefit. The exegesis points out to the fact that no one should accumulate land to one self and disadvantage others.

Besides what Keck says on land use according to Leviticus 25, Davis (2009) has also written extensively on the book of Leviticus chapter 25. The following section presents the argument on Leviticus 25 according to Davis.

According to Davis (2009: ix) God has provided the earth for people to live, not on, but with and from, and only on the condition that humanity must care properly for it. Davis argues that our relationship with land will always remain, to a significant extent, mysterious. Therefore, our use of the land must be determined more by reverence and humility, by local memory and affection, than by knowledge that which is called 'objective' or 'scientific.' Land must not be damaged permanently or compromise its natural means of sustaining itself. The best farmers will always adhere to this call.

Davis (2009) furthers the argument on land by saying that food production entails at every stage judgments and practices that bear directly on the health of the earth and the living creatures, on emotional, economic, and physical well being of families and communities, and ultimately on their survival. Therefore, sound agriculture practices depend upon knowledge that is at one and the same time chemical and biological, economic, cultural, philosophical, and religious.

Besides what others have said, Roger (1999) presents his own view on land care as he argues that the Bible has a lot to say on land use (ecology). Scripture really is an exceptional part of the literature of the ancient world in its attention to land care and food production. This is because 90% to 95% of the Israelites were farmers and they occupied land that was very fragile or not very conducive to farming. The best index of the health relationship between God and Israel as God's people or God and humanity in general, is how land is kept fertile all the time for food production.

According to the Bible beginning already in Genesis chapter one, where one might say that food production is introduced or set out, there is a tremendous emphasis on biodiversity in terms of plants bearing seed. '*The Earth brought forth vegetation, seed bearing plants of every kind.*' Immediately after the humans are created and given power with respect to other creatures, there's a reiteration of God who says, '*(L)ook, I have given you all this for food.*' In modern terms, what is being set forth in Genesis 1 is food production and human dominion.

It is therefore important to note that food played an essential role in biblical times and it still does in the life of an orthodox Jew today. In the Old Testament, the Bible reveals that when the Israelites journeyed through the desert and when they were hungry, God sent manna from the heavens on which they fed themselves. There was enough for all of them and their hunger was satisfied. The desire of God for all creation is that all should have enough food to eat. A further reference to growth in food production and the manner, in which it meets population growth, is seen in Gen. 2: 15.

John and Scullion's (1984) argue that the story of creation of human beings in Genesis 2 makes quite clear the essential components of human existence. Human being is created by God, and so from the very beginning they stand a relationship with their creator, Gen. 2:7. A human being as a complete person is living being because God has breathed life into him. Human existence includes occupation or work, v. 15b of Gen. 15 and most important of all, community with other human beings. Work is regarded here as an essential part of existence. Life without work would not be worth of human beings. Just as in Gen. 1:1 – 2:4a the activity of the creator follows the rhythm of work and rest, so too God given human existence cannot have meaning or fulfillment without such obligation. Work to produce food for life sustenance is part of human existence because the living space which the creator has assigned to his people demands this.

It needs to be pointed out that, if people had a better understanding of how to value the land and how hard it is to grow food on it, agriculture or farming would not have been the most fragile sector of today's economy. From an Old Testament perspective, the health or fertility of the land is one of the best indexes today of the health or sickness of the people's relationship with God. Rogers (1999) observes that in this century, man's relationship with the earth has been violated by nature. This has led to a failure by most people to take God's covenant of stewardship of land seriously. The way land is treated currently, has global, even cosmic consequences. Israel's land use and her relationship with God is discussed in the following section.

4.4.1.4 Israel's land use and her relationship with God

According to Wright (2004: 103 -144) the land in which Israel lived in Old Testament times was of major importance in their relationship with God, not merely as an asset

essential for agricultural vitality. It was also not considered or handled merely as real estate or property that could be bought and sold commercially. The land for Israel was an area of central theological and ethical importance and any account of the Old Testament ethics takes this angle very seriously.

It is observed that the Bible story of redemption begins with God's promises to Abraham. Anticipation of God's redemptive intention comes much earlier of course. It is not surprising, therefore, that the covenant promise to Abraham which actually launched the work of redemption in history included land as a fundamental constituent of that promise (Bible, 1984: Gen. 12:7, 15:7, 18-21, 17:8). In fact, in purely statistical terms, land is clearly the dominant theme in ancestral promise. Out of the 46 references to the promise in the whole sweep of text from Genesis to Judges, only 7 do not mention the land while 29 refer solely to it. In Gen. 28:4, for example, the blessing of Abraham means simply possession of the land.

The land thus becomes one of the most prominent features of the entire sequel of the Old Testament story. Land in all its dimensions – promise, conquest, shared possession, use and abuse, loss and recovery, was fundamentally a theological entity. The story of Israel is the story of redemption and we have seen that the nation of Israel was part of the purpose and pattern of redemption. The same can now be said of the economic role of the land. The land was part of the pattern of redemption too, because the social shape of Israel was intimately bound up with the economic issues of division, tenure and use of the land. It follows that anything as important to Israel's theology as the land must be correspondingly important to Old Testament ethics (Wright 2004: 103).

The following section discusses farming and food production among the Israelites.

4.5 FARMING AND FOOD PRODUCTION AMONG THE ISRAELITES

According to Wright (2004: 103f) farming was the main work which pre-occupied the Israelites' lifestyle. Unlike farmers in Egypt and Mesopotamia who depended on irrigation water, Israelite farmers did not depend on irrigation water. Even though the rain season in Palestine was rather short and soil was often rocky, the farmers had knowledge of how to clear and fertilize the land to ensure crops of good quality.

Farming methods evolved over the period of Israelite settlement. At first they could use the inhospitable hill country which was labour intensive. Only later in history were they able to use the rich plains of the valley for intensive farming. Sowing took place after the first rains had softened the ground. The farmers found it hard to plough before the rain, because it was difficult to break through the soil (Bible, 1984: Deut. 11: 13-17).

The Israelite farmers learned how to grow crops that best suited the different kinds of land, fertile plains, rocky hills and semi-barren areas. As time went on, they grew in knowledge and experience and were able to grow fruits which included melon, figs, dates, grapes and olives. During the time of the Israelites, the growing of crops influenced both their economy and social life (Wright 2004: 103f).

4.5.1 Crop Growing and Religious Festivals

Growing crops affected the economy and social life of the people. For example, some major festivals like the harvest festival and the festival of shelters were coordinated with the farming cycle. The Harvest festival, also called the festival of the weeks, celebrated the wheat harvest in the spring (Bible, 1984: Ex. 23: 16). The festival of shelters (Booths) is an autumn holiday and an occasion for the planting and gathering of crops and the annual harvest (Wright 2004: 103f).

4.5.2 Crop Rotation

The *American Bible Society Bulletin* (2010) points out that the Israelites may also have practiced crop rotation which would further have improved the soil (Bible, 1984: Is. 28: 23 -29). The orderly way in which the farmers grew their crops was to be in line with God's plan for the people of Israel and also for the good of creation. However, the book of Deuteronomy makes it clear that a large harvest also depended on how the people of Israel obeyed God's commandments (Bible, 1984: Deut. 11: 10-17).

Deut. 8: 7-9 sheds some light on how God introduced the Israelites to farming and food production during the biblical times. The Bible talks about God bringing Israel to good land, flowing with streams, springs and underground waters swelling up in valleys and hills. It was to be a land of wheat and barley, of vines and fig trees and pomegranates, a land of olive trees and honey, a land where Israel would eat bread without scarcity, lacking nothing.

In view of the above argument, this simply means that food production was believed to be an occupation ordained by God and was to be a blessing on His people, Israel. It is a Godly task to cultivate the soil and to be able to produce food as noted in Gen. 1. In the context of Isaiah 26, the Word of God says that God teaches the best farming practice to His chosen people Israel from whom other nations should learn from how to farm. The people He teaches are His children, the new Israel. Therefore, Christians should be the ones with the best farming practices. The farmers of the world should benefit from these practices today because it is God who makes them to be skillful farmers (Horst 2007).

The Bible (1984: Gen. 2:1, 5: 2-3 and 12) indicates that tilling the ground and rearing cattle were the chief employments in ancient times. The Egyptians for example excelled in agriculture. After the Israelites took possession of the Promised Land, their circumstances improved and they developed the art of agriculture to such an extent that it became the basis of the mosaic commonwealth. Farming according to the season calendar of the Israelites is the subject of discussion in the next section.

Patch (2009) observes that in Palestine the year was divided into six agricultural periods and these include the following:

1. **Sowing time:** *tisri*, latter half (beginning about the autumnal equinox) *marchesvan*, *kisleu*, former half. Early rain due – first showers autumn.
2. **Unipe time:** *kisleu*, latter half, *tebet*, *sebat*, former half.
3. **Cold season:** *sebet*, latter half a day, *nisan*, former half, latter rain due (Bible, 1984: Deut. 11:14, Jer. 5:24, Hos. 6:3, Zech. 10:1, Jas. 5:7, and Job 29:23).
4. **Harvest time:** *Nisan*, latter half (beginning about vernal equinox, barley green, Passover) *ijar*, *sylvan*, former half, wheat ripe, Pentecost.
5. **Summer time** (total absence of rain): *sylvan*, latter half, *tammuz* *ab*, former half.
6. **Sultry season:** *ab*, latter half, *elul*, *tisri*, former half, gathering in of fruits, the six months from the middle of *tisri* to the middle of Nisan

were occupied with the work of cultivation and the rest of the year was devoted to gathering in of fruits.

According to Patch (2009) the extensive and easily arranged system of irrigation from the hills, streams and the mountains made soil in every part of Palestine richly productive. (Bible, 1984: Ps. 1:3, 65:10. Prov. 21:1, Is. 30:25, 32:2, 20 and Hos. 12:11). The utilization of careful cultivation and manure increased its fertility to such an extent that in the days of Solomon, when there was an abundant population, ‘20 000 measures of wheat year by year’ were sent to *Hiran* in exchange of timber (Bible, 1984: 1 Kgs. 5:11). Wheat was also sent in large quantities to the *Tyrians* for merchandise in which they traded (Bible, 1984: Ezek. 27:17). The wheat sometimes produced hundredfold (Bible, 1984: Gen. 26:12, Mt. 13:23). Figs and pomegranates were plentiful (Bible, 1984: Num. 13; 23). And grapes and olives grew luxuriantly and produced abundant fruit (Bible, 1984: Deut. 33:24).

This reflection on farming among the Israelites tells of the fact that food production was at its best during the biblical times because they applied the principle of stewardship to their farming. Israel knew very well that land was God’s gift to them to be used for agriculture and food production in order for them to have enough food and this land was not to be abused. As a result Israel thrived in farming and was never an importer of food but an exporter.

We need to point out that just like the Old Testament the New Testament also talks about subject of food production and food security. It is imperative to explore the New Testament’s stories regarding food production. The following section discusses the interpretation of food and agriculture practice in the New Testament.

4.6 INTERPRETATION OF FOOD AND AGRICULTURE IN THE NEW TESTAMENT

4.6.1 The Subject of Food in the New Testament

De Gasper (1981: 31) argues that there are many indicators that refer to the aspect of food from the New Testament perspective. He points out to the following aspects:

4.6.1.1 Food and Grace

According to De Gasper (1981:31f) the ecumenical approach to a more participatory society can be enriched by viewing the relation between food and grace in the Bible, especially the New Testament. Food, specifically bread and water, are signs of God's grace to human kind, referred to as Bread and the Water of Life. The Lord's Prayer also teaches appreciation of the daily bread as a gift and not only as a result of human efforts. It is a gift meant for sharing, for justice and participation. The Sermon on the Mount teaches about the good things that God has freely provided and that is to be shared with all human beings unconditionally, even with the enemy. Sharing food is a way of witnessing God's grace according to the book of Luke 11: 2-8.

4.6.1.2 Food and Hope

The ecumenical longing for sustainable food supplies for the world society is reinforced by the biblical images of food in the future of human kind. God comes and lives among humans, physically through the incarnation of His son Jesus Christ, who took pity on the hungry and fed them. Jesus promised a future kingdom of feasting, of full communion (Matthew 14: 13 – 21).

4.6.1.3 Food and Work

De Gasper (1981: 31) observes that from the book of Genesis to Revelation, the Holy Scriptures witness that food should not be taken for granted. Food is a sign of God's grace. Human work for food production is not as a result of the fall of human kind into sin. It is rather an integral element of God's mandate for the good order of creation (Bible, 1984: Gen. 28). Human cultivation of the earth and stewardship of created things are part of the gracious mandate of God. The human fall did not destroy this aspect of God's created order. But human sinfulness has serious consequences in at least two aspects:

- (a) Breaking communion between God and human beings.
- (b) Breaking the communion between human kind and nature.

This brokenness is reflected in God's judgment on the first human couple. God said: 'with labour you shall win your food from the ground all the days of your life. You shall gain your bread by the sweat of your brow until you return to the dust from which you were taken. Dust you are and to dust you shall return (Bible, 1984: Gen. 8: 21-22)'.

The new beginning with Noah included a new beginning for the possibility of productive work and prosperity.

4.6.1.4 Food and Faith

The faith, life, death and resurrection of Jesus have profound implications for Christians who live in an environment which has, in many ways, aggravated and exploited the world food crisis. In today's world human hunger proves that the crucifixion is an ongoing historical reality. Those who are committed to human liberation must proceed in faith (De Gasper 1981: 31f).

In addition, Nelson (1986: 205-208) points out that food insecurity is in a certain way the consequence of social injustice. Hunger will be overcome to the degree that justice is built into the religious and social fabric of the nations. We are invited by God to address the injustice caused by the world food crisis which has, in turn, been the result of agricultural failure. If we accept God's invitation, we will hunger and thirst for justice and we will live out our authentic Christian faith through our commitment to liberation and to the risen Lord.

Jesus recognized the importance of creating an order within which people would be fed. He understood the need to revitalize the idolatrous temple and He was fully aware that unjust political and economic structures and authorities were in desperate need of transformation. Christ's teachings form the basis of a Christian outlook on life because his followers have through all the ages regarded faith as an unquestionable belief or trust in Jesus as the Son of God. They have professed Jesus as the Christ and have centered their faith on the crucifixion and resurrection, through which Jesus became the Christ, bore the sins of the world and guaranteed our Salvation (Bible, 1984: Mt. 4: 1:11, 23, 14: 14f, 21: 12f, 27: 37, Lk. 4: 18-19, 6: 20f, 11: 42, 12: 15f).

4.6.2 Agriculture and its Setting in the History of the New Testament

As is the case with the Old Testament, the word food also fills the entire New Testament world. The word food (Greek - *artos*) sustains human life and it forms part of human solidarity. It is also symbolically used to refer to Christ as the food from heaven. In the quest for a better understanding of how the New Testament addresses the subject of food, this part will look at one of the Pauline writings in 1 Thessalonians.

4: 11-12. In these two verses Paul gives an injunction that the Thessalonians should earn their living by laboring with their own hands. Perhaps the Thessalonians were taken by surprise by this piece of advice because most of the Greeks, being highly educated, did not regard working with their own hands as important. Paul does not agree with their outlook and expresses his opinion in this text (Helmut: 2000: 76 - 79).

According to the Thessalonians physical labour was meant for slaves but for everyone. The apostle Paul rejects this notion in 2 Thessalonians 3: 11-12. He says, '*we hear that some among you are idle. The Thessalonians are not busy, they are busy bodies*'. Paul urges such people in the name of the Lord to settle down and earn the bread they eat. Paul also raises an issue against laziness and the wasting of time (Bible 1984).

In Acts 18: 3 Paul reminds the Corinthians of his profession of making tents in order to earn a living (Bible, 1984: Acts 18:3). In verse 4, He further reminded the Greeks that even if one is highly educated, there is need to labour with one's own hands in order to make a living. Christ also spent most of his time as a carpenter (a rejected profession of his time). Self-reliance is paramount to Paul. He is critical of a situation where people are expected to exist in service of others at their own expense.

Urbanization was a significant development of the Hellenistic and Roman periods. Cities, whether they had been long established or newly founded, maintained their character as regional centers and market places for the surrounding villages and hamlets, where people normally lived. Subsistence farming consisted mainly of agriculture and animal husbandry; its purpose was to provide for the needs of the city that controlled the regions as pointed out by Helmut (2000:76f).

Helmut (2000: 76-79) and Koester (1995:76f) both argue that as much as 70% of the Hellenistic population's nutritional requirements during this time came from cereals. Most of the arable land was therefore committed to growing grain. Wheat and emmer (hard two-kernel wheat) were grown throughout the Mediterranean region. In areas where the soil was poor, barley rather than wheat was the primary grain product. Apart from cereals, vegetables, peas, beans, fava and olives provided the required nutrition for the Hellenistic population. The high cost of overland transport limited the export of agriculture products. For its everyday needs, a city had to rely on its own food products.

All countries of the Hellenistic empires, including areas of rich agriculture, remained the source of wealth throughout the ancient period. Greece possessed a highly developed agriculture and sometimes specialized in oil and wine production for export by only a 10th of its own population. The Greeks were, therefore, always dependent on imported grain, most of which came from France and Southern Russia (Helmut 2000:76f).

Other providers of grain imports, namely Cyprus, Phoenicia and Cyrenaica were in the hands of the Ptolemies during the early Hellenistic period, which meant that the Ptolemies controlled the Greek food market. By increasing their own grain production, they made Egypt one of the primary grain exporters of antiquity, a role that it continued to play in the Roman period. Access to the Egyptian grain market became vital for control over the entire Mediterranean realm. Egypt itself was self-sufficient in every aspect of its food production, but the fertility of its fields depended heavily upon the Nile as its source of irrigation and fertilization.

Helmut (2000: 76f) says further that the Seleucid Empire encompassed the most diverse agricultures, ranging from nomadic animal husbandry to highly sophisticated irrigation systems for growing wheat, especially in Mesopotamia. Deficiencies could be corrected by regional trade within the Seleucid realm, but difficulties arose when agricultural areas were lost in the gradual dissolution of the empire. Rome was originally fully capable of providing for its own population. However, many areas in Italy were converted for the purposes of wine production for the lucrative export trade, grain products had to be imported, especially for the needs of the growing masses of the urban population of Rome. The amount of land devoted to agriculture increased markedly during the Hellenistic period. Several attempts were made in Greece to drain swamps, a practice that was also attested for the fayyum in Egypt.

The Seleucids made similar efforts in Mesopotamia where technicians and engineers were to be supplied by the king. Vacant and fallow areas were opened up for agricultural use through the founding of new cities. In other cases, land owned by the king was sold, leased or handed outright to new settlers to establish farms and estates. Little is known about the Seleucid Empire's improvements in agricultural methods or introduction of better machinery. Unlike the Ptolemies, the Seleucid kings made no

attempt to centralize their economy. It is certain, however, that the Seleucids introduced many innovations analogous to new methods put to use in Ptolemaic Egypt, especially the farms cultivated by Greek settlers. But there was little change for the native farmers. The temple territories and the estates remained in the hands of their former owners. Egypt is known more for its agriculture and food production (Helmut 2000: 76f and Koester 1995: 76f).

Helmut (2000:76-79) argues that the kings of Pergamum followed the Ptolemaic Egyptian example and actively engaged in planning and managing agricultural production. They were concerned with improving cattle breeds, in part in order to obtain skins for their parchment industry. Their stud farms became famous. In spite of the great interest of the Roman writers in describing farming methods, Roman agriculture followed Greek models and showed few if any innovations.

According to Helmut (2000; 76f) the development of large scythe to replace the sickle for harvesting grain seems to have been limited to Gaul and Britain. There is also evidence in Gaul of the invention of a grain harvester, drawn by mule or oxen. It has, however, not been successfully reconstructed on the basis of ancient depictions and descriptions. Romans were interested in improving and propagating viticulture, especially in places like Gaul and Germany as well. The Romans were also successful in improving grafting methods and introducing Eastern fruit trees such as the peach and cherry and they promoted the consumption of figs for their high nutritional sugar value. It is observed that the contribution of Roman agriculture was its mediation of Greek and Mid-Eastern foods and production methods to Western and Central Europe (Helmut 2000: 76-79).

Tenney (1985) observes that during the time of Christ and the early church, the Roman Empire occupied the lands surrounding the Mediterranean basin which was ideal for agriculture and food production.

The overview of references to agriculture and food production in both the Old Testament and the New Testament brings out the importance of food for livelihood and the need for the church today to participation in the promotion of sustainable agriculture and food production to enhance food sufficiency. This can work out well especially in

Zambia if the church was as one body, the Council of Churches in Zambia in transforming communities through food security. The researcher therefore, argues that body of Christ should join efforts in addressing the current food insecurity in Zambia than leave it along for the government. Efforts such as the one taken up by RCZ should be emulated by other denominations in Zambia. The church should be in the fore front promoting farming that is ecologically sound as this farming Gods way. The following section discusses farming Gods way as a measure to enhance food production.

4.7 FARMING GOD'S WAY

According to the argument of Frampton (2008) and also Myren (1990) farming God's Way is a conservation farming package that includes the implementation management principles and a suite of farming technologies with the aim of helping farmers make a profit. The package was first developed by Brian Oldrieve in the 1980s and has since evolved to its present form after years of training involving farmers throughout Zimbabwe and the surrounding countries.

4.7.1. History of Farming God's Way

According to Frampton (2008:44) and Myren (1990), Farming God's Way has been developed and implemented for over 28 years by Brian Oldreive of Hinton Estate on large commercial farms in Zimbabwe. The decision to implement the Farming God's Way practices originated as a result of the need to correct decreasing yields, increasing input costs, large-scale sheet erosion and a precarious financial situation. Farming God's Way was developed for large scale farming operations and thereafter adapted for small scale farmers, so that they too, could benefit from the outstanding results obtained.

Brian Oldreive's research on Farming God's Way was prompted by his observation of tremendous soil and water loss through erosion of the finely drained soils. Farming God's Way has tremendous advantages because it helps to manage the creation by tilling the soils without destroying it. It uses the process of decaying plant material on the surface to return fertility to the soil. In this type of farming practice, a farmer becomes a good steward by caring for and managing the land in a way that would ensure that farmlands can be passed on to future generations as an inheritance. This

type of farming has been referred to as sustainable agriculture in chapter 2 of this research.

The advice to farmers who intend to practice Farming God's Way is that implementation of this system should be done gradually to ensure effectiveness and excellence. If done properly, within a short period of time, crop yields and profitability will improve dramatically. Farming God's Way allows a farmer to grow a variety of crops ranging from maize, soybeans, groundnuts, cotton, sorghum, vegetables and other crops.

According to Frampton (2008: 44) Farming God's Way is about bringing agricultural practices back to the way God designed it so that farmers can fulfill his commissioning to 'care for and work the garden' in such a way that it would be restored as a precious inheritance for future generations.

4.7.2 The Technology behind Farming God's Way

When Farming God's Way is taught to farmers, many small but important lessons are taught on how to achieve the best yield possible. However, the basic practices which set Farming God's Way apart from conventional farming commonly practice are described below:

(i) Retain Crop Residue (Mulching)

Instead of burning the residue from the previous crop or the virgin vegetation or feeding it to livestock, the chopped and decaying plant residue should be left covering the soil. The benefits of mulching include: reduced raindrop impact and crusting, better infiltration, organic nutrients available in the soil, reduced soil erosion, reduced evaporation, moderation of soil temperatures for better plant germination, reduction in weed population and improved crop yields. This type of farming is what the book of Leviticus refers to as fallowing or in other words Sabbatical year (Leviticus 25).

(ii) Zero Tillage (Minimal Tillage)

Instead of ploughing which inverts and damages the soil, rows of planting basins should be dug in which seeds are placed. The planting basins are dug during the winter months and in the same location each year. The benefits of this method include: improved soil structure and increased soil water holding capacity. There is reduced erosion and

improved soil fauna. The other advantage of this farming system is that a farmer has reduced effort and reduced cost. In order to have better yields, the farmers are required to plant seeds very soon after the rains so that roots and organisms can bind the soil and prevent slumping downwards and across the slope.

(iii) Weed Control

Weeds always stunt crop growth as they compete with crops for moisture and nutrients from the soil. By maintaining good weed control throughout the year, Farming Gods Way does well even in winter as yields are increased and future weed crops are reduced.

(iv) Rotation of Crops

Crop rotation is an important component of conservation farming as this allows for decreased pest and disease build-up, spreads the risk of crop failure as different crops are susceptible to different stresses and timing of stress. It also spreads labour requirements as different crops may have peak labour requirements at different times. This type of farming was practiced by the Israelites and it is mentioned in the Book of Deut. 11: 10-17 as a good farming practice.

However, small holder farmers who rely on producing their staple subsistence crops are generally reluctant to plant other crops unless their staple crop production is assured. Frampton (2008:44f) argues that by reducing the risk of crop failure, conservation farming allows farmers to diversify their enterprises and adopt sustainable crop rotation practices.

(v) Implementation Management

The agricultural practices taught by Farming God's Way will not result in benefits unless they are implemented correctly. That is why the implementation management principles are a crucial part of Farming God's Way. Teaching in a way that is guided by experience; the majority of farmers struggle to implement the technology correctly. The four management principles for farming God's Way, as suggested by Frampton, are:

- ***Field preparation done on time:*** Hoe preparation, collecting of manure, mulching, seed and fertilizer should all be done well in advance before the start of the planting season.

- ***Planting by standard measurements:*** Plant population density should be observed by taking note of spacing, depth in seed planting, planting in straight rows and making sure that three seeds are planted in each row.
- ***Fields or stands should be weed free:*** Sowing should be done in fields where there are no weeds.
- ***No wastage of resources:*** A farmer practicing Farming God's Ways always makes sure that there is no wastage of water, soil nutrients, fertilizer, labour, sunlight and even market time.
- ***Done with a positive attitude (done with joy):*** When Farming God's Way, all operations should be done with a positive attitude.

4.8 AN ECCLESIOLOGY OF FOOD SECURITY

The biblical theological perspective of food security discussed in chapter 4 of this research is a strong foundation to form an ecclesiological perspective of food security. The Bible tells us that God is very much interested in a development that transforms the whole creation for a better living environment. Transformation development does not only apply to the transformation of individual minds and behaviour, but also to the transformation of families, society and the world. In other words transformational development entails holistic transformation of a human being. In this regard, the Church has a big role to play in transforming communities holistically. The church is a worthy and valued catalyst of community development within the social development paradigm. In this era of food insecurity, the church should formulate an ecclesiology of food security in order to address food shortages amongst the rural poor communities. An ecclesiology of food security is that one which engages the small holder farmers to produce food on a more sustainable way in order to guarantee future food production. In this regard, chapter 5 of this research presents a frame work for an ecclesiology of food security based on the Biblical theological perspective of agriculture and food production.

4.9 CONCLUSION

In conclusion, Chapter 4 has argued that the Bible is not silent on the subject of agriculture and food production. Both the Old Testament and the New Testament pays serious attention to the subject of agriculture and food production. From a theological point of view, the Israelites' lives were centred on either crop farming or animal farming. It has been established that the Israelites knew how to manage fragile land in such a way that it produced enough food for everyone and no one among them lacked food. In addition, they had surplus food to sell to other nations.

It has been established that the entire Bible, from Genesis to Revelations, gives attention to the subject of agriculture and food production quiet extensively. Believers of today have a lot to learn from the Bible on good and sustainable agriculture practices to enhance household food security. The wish of God as written in the Bible in the story of the Garden of Eden, it is clear that God wants food security for his people. Food is important for human existence and it shows Gods providence over his people. This research argues those who engage in agriculture and food production are actually continuing to participate in God's plan for His creation.

The Bible teaches of an enduring vision of '*new heavens and a new earth*' (Bible, 1984: Is. 65: 17) where God's justice will reign (Bible, 1984: 2 Pe.3: 12 and Rev. 21: 1). The Old Testament calls for believers to care for the land and provide for those who need food, especially the poor and the outcasts. The tradition of the Sabbath year is one good example of how believers should treasure land. The Bible records that during the seventh year, land was to have a complete rest. It was to be a Sabbath for the Lord, when they were neither to sow their field nor prune their vineyards (Bible, 1984: Lev. 25: 4-5). God explained to Moses, the leader of the Israelites, that the land was to be used to produce food so that everyone would be food sufficient. While the land had its Sabbath, reserved produce was to be food for everyone including Moses' hired helpers and the tenants who lived with him (Bible, 1984: Lev. 25: 6).

Time and again, Jesus gives a warning against selfishness and greed in the Scriptures. He thus calls everyone to feed the hungry and show special concern for those who are poor. In the story of the Last Judgement, Jesus says that one of the fundamental

measures of peoples' lives will be to show how they care for people in need (Bible, 1984: Mt. 25: 35). Agriculture and food security is not easy to attain. Hence there is need for the church to play its prophetic role and participate in the promotion of sustainable agriculture in order to avert the current hunger in Maposa community and Zambia in general. An ecclesiology of food security is more relevant this time than ever before due to the global food insecurity situation. Chapter 5 therefore, provides a theological ecclesiological framework for food security.

CHAPTER 5

A THEOLOGICAL ECCLESIOLOGICAL FRAMEWORK OF FOOD SECURITY

5.1 INTRODUCTION

The church and other Christian institutions must promote sustainable community development with an integral theological view of humanity as they engage in transforming communities holistically. According to Samuel and Sugden (1987:81) transformation development in this regard involves physical and spiritual transformation.

God is very interested in a development that transforms the whole creation for a better living environment. Transformation development does not only apply to the transformation of individual minds and behaviour, but also to the transformation of the well being of families, society and the world. In other words transformational development entails holistic transformation of a human being.

The Church has a big role to play in transforming communities holistically. The church is a worthy and valued catalyst of community development within the social development paradigm. This epistemological approach is based on the community building nature of the church, which is illustrated by its Biblical calling and injunction to serve the poor, as well as its theological capacity and ecumenical nature (August 2010: 43).

In view of the above and what has been discussed in the previous chapters of this research work, this chapter therefore, provides a theological synthesis (FRAME WORK) to guide the Reformed Church in Zambia (RCZ) and the Council of Churches in Zambia (CCZ) in general in their 'QUEST' for transformational development through the food security project in Maposa community and elsewhere. Following is the theological framework.

5.2 A THEOLOGICAL FRAMEWORK OF FOOD SECURITY

5.2.1 The theology of food

The Bible reveals that the desire of God according to Genesis 2 v. 15 the command of God to his people is that they work the earth and are able to produce food. God gifted people with the earth so that it produces food so that none of his creation goes hungry without food. The commandment of God as provided for in the Bible is that there should be food sufficiency and no one should die out of hunger (Bible 1984: Isaiah 65). This is the Isaiah vision of shalom in the world according to Leupold (1971: 357-369). The '*Shalom*' in the context of Isaiah implies peace with God, peace with Man and peace with nature just like it was in the Garden of Eden before the fall of Adam and Eve. The instrument in the world to transform the world to start experiencing this shalom is the church, which is the sign of the kingdom. God's intention for the church is that it acts out its citizenship within the kingdom in a spirit of love. The entire world is the object of redemption and the church and the Holy Spirit are the vehicles of that redemption. The very act of being a Christian assumes doing good for all humanity (Samuel and Sugden, 1987:52). Therefore, the following characteristics of transformational development will serve as the basis for the theological ecclesiological framework for food security evaluation.

5.2.2 Life sustenance

Any plans for transforming human existence must provide promote food availability as life sustaining to the society. When a society has only minimal of what is required to be a full human being, life becomes a distortion of God's expectation for well-being of humanity. The Old Testament establishes God's desire to meet those basic needs such as setting free those who have been crushed, sharing food with the hungry, providing shelter to the homeless and clothing the naked (Isaiah 58:6-7).

Moreover, Jesus said that, the struggle to meet the needs of the poor - of food, water, shelter, clothing, health care and spiritual nurturing would be seen as an indication of true salvation on the judgment day (Matt. 25:31-46). The provision of life sustaining necessities and an overall increase in society's wealth provides a quantitative change (Bragg1987:40). The church today should work towards life sustenance through food security in transforming communities.

5.2.3 Equity

An equitable distribution of food and other goods among the peoples of the world is very important. The Christian favours a kind of development that is within the reach of the majority. Equity is essential to transformation because all humans are God's children, with the same needs and potentials. God has a special concern for the poor, the defenceless, the weak, the marginalized, the sick and the hungry. The Early Church shared such concern and gave of what they had to the needy (Acts 2:42-47). In transforming communities, the church must promote equity in the availability of food.

When Paul commented on the sharing by the Macedonian church, he meant the question of equality. At present, our surplus may meet the needs of others but one day our needs may be met by the surplus of others. Thus, if social services are to be equitable, the advantages must meet the neediest. The provision of life sustaining necessities and an overall increase in society's wealth provides a quantitative change.

5.2.4 Justice

Justice goes beyond mere redistribution of goods and services. One can have a fair share of material goods and services without enjoying justice. Unjust relationships and power structures need to be transformed into just ones, eliminating privileges for the few that are bought at the cost of many. A just vision of the transformed world is where every human, no matter his/her race, religion or nationality, can have food and live a fully human life. Justice in the end should result into emphasizing of meeting the needs of the poorest of the poor and a fairer redistribution of resources satisfying the basic needs, in a harmonized co-operative world in which everyone seeks to live at the expense of no one else. In the sense of household food security, chapter 2 of this research argued that the church should promote a just and sustainable food production system that ensures equal opportunity by everyone to earn daily food. Justice demands equitable access to resources needed for food production (land, labour and capital). Justice in the food production system demands preference treatment for small holder farmers. It is also demands participation in the food production by all stakeholders. This is the call for the church today as an agent and catalyst of transformational development.

5.2.5 Dignity and self-worth

True transformation also depends on the establishment and the affirmation of all people's dignity and self-worth. People need self-esteem to be fully human. This calls for the re-evaluation for the true needs of the people, encouraging self-reliance, participation, and instilling trust in people and nations based on their autonomy; thus, affirming the worth and dignity of all. The Church as it works in transforming communities through the promotion of sustainable agriculture to enhance household food security should work towards affirming people's dignity and self worth. In all development programs, people should come first and not the project (Burkey 1996).

5.2.6 Freedom

Freedom is a vital component of transformation. Throughout history, as people have struggled to change their societies, they have set their goals in terms of freedom from subservience and slavery. One of the objectives of development is freeing people from ignorance from sustainable agriculture practises to enhance food security. Christian transformation must work to liberate people from these bondages and also from bondage to themselves. In John 8: 36 Christ tells his followers that, "*If then the Son sets you free, you will be free indeed*" – that is, free to achieve all dimensions of the human potential God has endowed this world with (Samuel and Sugden, 1987:43). Therefore, freedom should aim at liberating people from unjust local and global powers by stressing local control and participation in the structures and decisions towards a transformed society that will be food secure.

5.2.7 Participation

Participation plays a very meaningful role in transformational development. If people participate in the process of their own transformation towards becoming food secure, it becomes meaningful, effective and lasting. The best laid out plans of developers have been wrecked by top-down approaches that disregard the participation of those involved. Local initiatives and control from the beginning of any project are essential for people to commit themselves to it as their own and to carry it forward (Samuel and Sugden, 1987:44).

In this regard, God has always given high value to human participation in his plan for the world. He has allowed human beings to participate in the shaping of history, both personally and collectively. Christians are called fellow workers with God and stewards of God's resources. True human transformation, therefore, comes about only when people are able to act on their own needs as they perceive them and progress towards a state of wholeness in harmony with their own context. Participation should lead people to invent and to generate new resources and techniques to increase their capability to absorb them and to shape their own way of life. This is very critical most especially in agriculture and food production. Food security projects will only realize the set objectives if the local farmers are involved in the planning process of the project, have identified their own priorities for the project and are able to use their own resources to exercise control over their economic, social and cultural development.

5.2.8 Cultural Fit

Transformation must be appropriate to the culture that is to be transformed in this case even in food production. All cultures are a part of God's creation and Jesus honored culture by entering fully into Jewish social and religious life with all its traditions. No culture is pure and holy, but all have intrinsic values that can be redeemed and used as a basis for social transformation. This aspect is important in transformational development and should not be undermined by the change agents.

Too often, however, modernizers and development workers have ignored customs and social patterns in an attempt to bring material benefit to the backwards. They regard local traditions as deterrents to change and technology without understanding the rationality of society's accumulated wisdom. The results have been cultural imperialism and the destruction of indigenous values and even of whole cultures. We can deduce, therefore, that no form of social transformation can be achieved without culture, and if any culture is destroyed, a part of creation and that of humanity dies (Samuel and Sugden, 1987:45). It is imperative that the church as it works towards sustainable development, respecting people culture and traditional values is the key to success of the project. People should not be belittled or condemned because of their customs and traditional beliefs. The church today should work towards transforming culture and traditions but with due respect to people being served.

5.2.9 Spiritual transformation

The core of human and social transformation is spiritual. Without a change in attitude and behaviour, human beings remain self-centred creatures. They are unlikely to transform the external structures of and relationships in their society. The power in society of sin (both individual and institutional) is a basic deterrent to positive change (Samuel and Sugden, 1987:46). Many development programs have failed because of human greed and power politics.

Thus, spiritual transformation must begin with an individual but must spread to encompass the transformation of all of society. When men turn to God and are transformed by the Spirit, their individual lives as well as the structures in which they live are affected. As social, economic, and psychological relationships are redeemed, structures and institutions are transformed. Redeemed structures, in turn, allow people to be more human (Samuel and Sugden, 1987:47).

5.2.10 Reciprocity

Progress and social change can result from both independent discovery within a culture as well as from intercultural contact and the transfer of innovation. All societies receive benefits from others and all depend on others. No one society is self-sufficient. Burn (2003:6), argues that reciprocity is fundamental to human development. Whatever the nature of people, they undoubtedly live in relationship to each other. They are interdependent and both their survival and their happiness depend on that interdependence. This interdependence is brought about by the web of reciprocity exchanges. The aspect of reciprocity is very important in working with people to improve their livelihood. If farmers can learn to inter depend on each other, they will surely learn from each other's failure and success in farming. This aspect is cardinal in the implementation of a food security project.

5.2.11 Ecological soundness

Transformation should also be environmentally sensitive. Our world is a closed biosphere that is delicately balanced for the existence of life, including human life. Therefore, we should care for the world around us. The Cocoyoc Declaration emphasizes that everything we do must be done in the context of preserving a base of

production compatible with the necessities of future generations. Any technology must be appropriate in its cultural and environmental context, both now and in the future (Samuel and Sugden, 1987:46).

Having wrestled with the characteristics of transformational development which the church should embrace as it works to transform communities through food security, it is now important to explore and find out what is the Bible notion of food and food production in order to form a firm foundation for the theological ecclesiological framework of food security.

5.3 BIBLE EVIDENCE FOR SUPPORTING THE NOTION OF FOOD

The Bible provides overwhelming evidence on the notion of food production in order to enhance food security. Following are some of the evidence from the Bible which I have summed up in point form.

- **Sound agriculture practices:** In (Deut. 11:10 – 17), the Bible narrates that *‘God told Israel that the land they were about to enter was not like Egypt because there they planted seed and irrigated it by foot as in a vegetable garden. Canaan was land of mountains and valleys that drinks rain from heaven. But land of Canaan was cared for by God and He watches over it all the time. The condition on which God sends the rain was obedient of Israel.’* The implication of this teaching for a farmer today is that farming is dependent on the health of the earth and a good relationship with God.

According to Davis (2009: ix) food production entails at every stage judgments and practices that bear directly on the health of the earth and the living creatures, on emotional, economic, and physical well being of families and communities, and ultimately on their survival. Therefore sound agriculture practices depend upon knowledge that is at one and the same time chemical and biological, economic, cultural, philosophical, and religious.

- **Stewardship of land:** In the Bible (Gen. 2:15) says ‘*then God said, ‘then the lord God took the man and put him in the Garden of Eden to **work it and take care of it**’.* The Bible teaches in this scripture that land is to be cared for if it is to remain profitable for generations and generations to come.

Davis (2009: ix) argues that God has provided the earth to live, not on, but with and from, and only on the condition that we care properly for it. Our relationship with land will always remain, to a significant extent, mysterious. Therefore, our use of the land must be determined more by reverence and humility, by local memory and affection, than by knowledge which is called ‘objective’ or ‘scientific.’ Land must not be damaged permanently or compromise its natural means of sustaining itself. The best farmers will always adhere to this call.

- **Practicing irrigation farming to promote off season** The Bible talks about irrigation farming which made Egypt prosper in agriculture though Egypt is situated in the desert with scanty rains. Irrigation is an agriculture system that promotes off season farming (Deut. 11:10 – 17).

Planning farming: The Bible in Gen. 41:1-57 gives a picture of agriculture and food security planning in practice. The theology behind this text is that farmers should plan way ahead for drought and other constraints to agriculture and food production. Food should be stored in secured places to remain good for many years like during the time of Joseph.

God and crop harvest: The Bible Ex. 8: 7-9 says that Israel knew very well that farming was dependant on God and when they succeeded in farming, they appreciated God. The implication of this teaching to the church today as a Christian change agent is to create awareness in the community to believe and appreciate God in their farming.

Population growth and farming: Land is a limited resource; it does not expand to accommodate population growth. As such, over population will always have a negative repercussion on space for farming and food production. Therefore, as the church engages in transformational development the mind set change in family planning is one area that needs to be attended to the food security project.

The church as a prophetic voice (Jeremiah 1:9). The great prophets of the Bible like Jeremiah, Micah, Amos and Isaiah spoke fearlessly spoke against injustice that was

taking place between the rich and the poor. The church today is the great voice to the voiceless. Church should stand in the gap and advocate for land rights of the poor, food, shelter, and clothing.

Land tenure is conditional upon proper use and care of land in community. The present generation is embroiled in a crisis that is in material terms, the most far reaching crisis in humanity's life with God, it concerns us precisely as creatures – the only terrestrial creatures, so far as we know, who are susceptible to moral failure. The crisis has its moral lives, yet it now touches and probably affects every aspect of our physical existence and possibly that of every creature in the biosphere. Such an understanding of the current crisis is congruent with the biblical understanding of the world, in which the physical, moral, and spiritual orders fully interpenetrate one another – in contrast to the modern superstition that these are separate categories.

Yet because communities of Jews, Christians and also Muslims remain slow to reckon on such terms with now far advanced mistreatment of the fertile earth, the church has a big role to play it creating awareness that that people recognize that land care is a spiritual obligation. Davis (2009: 10) argues that there is failure of religious imagination as far as ecology is concerned. The church like prophet Jeremiah should continue to preach the importance of ecology in this generation so that the economic benefit of land is sustainable for generations to come.

The inequality between the commercial farmers favoured by the government policy of mass production and the poor farmer not known should be removed.

Levelling the food production mechanism: Justice goes beyond mere redistribution. One can have a fair share of material goods and services without enjoying justice. Unjust relationships and power structures need to be transformed into just ones, eliminating privileges for the few that are bought at the cost of many. A just vision of the transformed world is where every human, no matter his/her race, religion or nationality, can live a fully human life. Justice in the end should result into emphasizing of meeting the needs of the poorest of the poor and a fairer redistribution of resources satisfying the basic needs, in a harmonized co-operative world in which everyone seeks to live at the expense of no one else (Leviticus 25: 1f).

Ecologically sound farming: According to Gen.2.15) transformation should also be environmentally sensitive. Our world is a closed biosphere that is delicately balanced for the existence of life, including human life.

Farming is a form of employment: The command given to Adam to work the land and take care of it came earlier than the curse after Adam and Eve failed God in their conduct (Gen. 2:15).

5.4 TODAYS AGRICULTURE

According to Davis (2009: 14) our modern agricultural practices are long term disaster for land and consequently for our bodies. They also constitute an immediate disaster for farming families, who are unable to complete an economic system that deposits the bulk of agricultural revenues in the hands of the few multinational corporations.

The essential understanding that informs the agrarian mind set is in multiple cultures from ancient times to the present, is that agriculture has an ineluctably ethical dimension. Our largest and most indispensable industry, food production entails at every stage judgments and practices that bear directly on the health of the earth and living creatures, on the emotional, ecologic and physical well being of families and communities, ultimately on their survival. Therefore a sound agricultural practice depends on upon the knowledge that is at one and the same time chemical and biological, economic, cultural, philosophical and religious.

Land to Israel takes as central stage like commanded in Genesis 2:15. God commands the following: taking care of the land, work it, serving it, keeping it fertile all the time (Davis 2009:28 – 33).

5.5 AN ECCLESIOLOGY OF FOOD SECURITY

The Church should not remain indifferent to the fight for human dignity. The church as it were is the representative of the hand of God. For this reason, it cannot remain indifferent to the fight against hunger and for the provision of education. The Christian faith stimulates the church to look for the actualization of the kingdom in history in terms of justice, equal access to the creation that God intended for all, and the creation of all human community through love, worship, work, and play. In light of the present and coming kingdom, Christians can invest their lives in the building of the historical order (to the best human politics possible) in the certainty that neither they nor their efforts are meaningless or lost (August 2010:50).

Thus due to this incarnation nature, the approach of the church should be seen as complimentary to the people centered social development paradigm. In other words, a Christian approach to development does not mean that the basic principles such as participation, empowerment and sustainability are disregarded. On the centrally, as Eliston (1989: 173 – 174) points out, the incarnation nature is the essence of contextualized Christian approach to social ministry. The approach is summarized as follows:

- (i) The change agent has to live with the people.
- (ii) The focus should be on the people and their benefits.
- (iii) One should address the people within their frame of reference.
- (iv) Emphasis should always be placed on Gods will for that time and place.
- (v) The change agent should be in unity with the community and participate in their life process; and
- (vi) Needs of the community are experienced from ‘inside’ therefore, they are not insensitively projected.

Believers are called to exercise love as perceived by Christ. Biblical love seeks to be effective. It is love that flows from the awareness that God who loves us, is not indifferent to injustice, but takes the side of the poor and the oppressed in the struggle for human liberation (Bible, 1984: Matthew 25: 42f).

As Gunton (1989: 78) points out, the church is called to be the kind of reality, at a finite level, that God is in eternity. The primary echoes of the being of the church are to be heard in God’s relationship with the world He created and in the perfection of the creation in both Jesus and the Spirit. Gunton (1989) further argues that the concrete means by which the church becomes an echo of God’s being on earth lies in a move away from self-glorification to the source of its life in the creative and re-creative presence of God in the world.

Therefore, faith and the theological reflection on the food insecurity situation in Zambia can provide clear indications for a more meaningful and adequate response by the church to agriculture and food production. Through the churches participation the current food production, distribution and consumption problems in the country can be addressed. Food problems are matters of life and death for hundreds of millions in

Zambia and the church can become involved in finding a lasting solution through an active and appropriate confession of faith in the living God of the Bible.

August (2010) argues that the church today is doing a commendable work through evangelism. Less work is done, however, regarding other social challenges like agriculture and food production that have a negative impact on people's livelihood, especially in the rural areas. The church has focused on the spiritual part at the expense of the physical part. The church often does not see participation in food production as part of spirituality, for it is believed to be secular and of this world. The church has always behaved like a spectator who does not take part in the chemical reaction. As a result, the NGOs have taken over the matter of agriculture and food production with no input from the church which is, after all, the light and the salt of the world. But in recent years there have been positive responses from local congregations in the case of Zambia. These responses point to an awakening to the situation as members are called to engage in farming as a measure to economic survival.

There are clear indications that this hypothesis needs to be developed. The fact is that the church has written much less on the issues of agriculture and food production than the Non-Governmental Organizations (NGOs). In addition, the church has taught very few of its members to be involved in sensitization campaigns to encourage the general masses to take an active role in empowerment programs, even at their own family level. The church has trained very few experts to disseminate the message in a concrete way compared to the efforts shown by the NGOs. The church has not succeeded effectively in linking spiritual and physical, sacred and profane, holy and wicked. The list continues. The church of today has not avoided this pitfall either. It fails to engage with issues such as global warming, depletion of the ozone layer, environmental degradation and pollution of reservoirs. The church has not taken a keen interest to address such problems which affect the livelihood of people.

If the church fails to read these signs of changing times and interpret some of the causes of food shortage, hunger and famine, it means that the church is ineffective and not fulfilling its God given task on earth. The church has been sitting at a round table, discussing the same questions for so long, giving the same responses. Up to the present moment the church remains uninvolved in what is happening in the world and should,

as pointed out by Msangaambe (2010), disengage its social inactiveness. It needs to reevaluate its vocation as a torch bearer, as the genuine salt and the light of the world.

In order to address the issue of food security from a biblical point of view, the church should take up Joseph's challenge for our day to design new seven year plans for budget deficits and surpluses. The church should also feed the hungry communities according to Christ's commission. Joseph's way of sustainable agriculture should form part of the modern church's central message to the rural food insecure people. The church always needs to equip the saints by setting up a committee to run projects and to help predict the years of surplus production and the years of insufficiency.

Church members should be thinking more carefully about where and how their food is produced and what they eat. Some of the challenges regarding the consumption of genetically modified food should be addressed by the Bible through books such as Genesis, Leviticus and Deuteronomy. These books present a vision for holiness, for the wholeness of life in Israel and present that vision of life in accordance with what one may call the design of creation (Bible 1984).

De Gasper (1981) argues that the starting point for a renewed mobilization of the churches and the Christian believers can be found in the invocation of the following three convictions:

1. The gospel is, according to the words of Jesus himself, good news. In both the Old and the New Testament, the poor received preferential attention from God. Their situation, a combination of deprivation and oppression is incompatible with the character of God. Furthermore, God is the one who delivers people from oppression, satisfies the hungry with good things and above all, fulfills the hopes and expectations of the needy and weak. The 'good news to the poor' that Jesus brought is a call to conversion, which allows hope to spring up in the hearts of the lowly. An active response to the problems of hunger should be a matter of basic Christian conviction, an act of justice to the poor, to whom the gospel is proclaimed as 'good news according to Bible' (1984: Lk. 1: 53).
2. Another basic conviction of the biblical faith is that the poor and the hungry among them will inherit the kingdom of God (Bible, 1984: Lk. 6: 20). The

affirmation comes from Old Testament. Its writers insisted that the good king was the one who did justice to the poor (Bible, 1984: Jer. 22: 16). In the tradition of the Bible, the kingdom is an order where justice and equality will prevail. The people who would be citizens of this order are those who long for changes which transform their sorrow into joy, their pain into happiness, their oppression into liberation. The conviction has an eschatological character. Christians and churches are called to participate with the poor and the hungry in their hopes and struggles for justice. Participation becomes thus a sign of that order that they hope for and pray for in their current circumstances. Jesus promised the poor that they would inherit the kingdom of God. Whenever the hungry are satisfied, it is a sign of God's justice.

3. According to the teachings of Jesus on the final judgment, as quoted in the Scriptures, the Almighty God will separate those who enter His kingdom from those who do not on the basis of their service to the poor, the hungry, the thirsty, the stranger, the naked, the sick and the imprisoned ones. Jesus is present incognito among the needy. For those who believe in Christ, these words are decisive. They orientate clearly the believers in Christ to struggle against hunger and its causes. Gods' judgment on all persons and nations will become effective through the poor, the hungry and the humble (Bible 1984: Matthew 25: 31-46).

The basic Christian convictions, the reading of the Bible and the ecumenical vision of a just, participatory and sustainable society all emphasize the fact that food is a universal human right. It is God's wish that His people should have enough food to eat. It is a right acknowledged at the highest secular forum of the United Nations. It is guaranteed in the declarations of human rights and in the international covenant on economic, social and cultural rights in these terms (De Gasper 1981: 38).

The present food insecurity situation in Zambia can no longer be accepted. Whatever the reasons, this fundamental right is often abrogated; hence the church must continue to advocate on behalf of the poor and hungry that sufficient food for survival is a right. Changes need to be made, therefore, in structures governing food production and distribution of the food. It may demand a re-examination of the laws, tariffs and

treaties. It will mean a new look at the institutions which have been the key players in agriculture, food production and distribution in Zambia.

The church cannot allow other interests to interfere with its concern for the hungry. It cannot allow its commitment to the poor and hungry to be subject to the whims of public opinion. Fidelity to God who loves the poor commands the church to remain committed to the poor and hungry in season and out of season. The church should play its prophetic role in teaching farming in God's way so that people can have enough food to eat all year round, especially in the poor rural communities. This is the call for RCZ and the CCZ at large to engage in transformational development in order to address the current hunger situation in Zambia.

5.6 REFORMED CHURCH IN ZAMBIA IN CONTEXT OF ITS DIACONAL WORK

The Reformed Church in Zambia (RCZ) was founded through the missionary works of the Dutch Reformed Church in the Orange Free State (OFS) of South Africa. The Dutch Reformed Church began its missionary work in the Eastern Province of the Republic of Zambia on 5th July 1899 at a place called Magwero. The church at Magwero was founded by the missionaries as a small outreach mission station. In the missionaries' quest to expand their evangelism work, they established a central administration point by acquiring land in Magwero in the eastern part of Zambia. On this land they built the church hall, schools for the blind and deaf and also health facilities in order to assist its growing membership and the surrounding communities (Groeneveld 1994:19).

The beginning of mission work by the Dutch Reformed Church at Magwero resulted in the birth of the Reformed Church in Zambia. This was a direct result of work undertaken by the church in the adjacent Malawi. During the period 1885, Cecil John Rhodes through his British South African Company (BSAC) was busy extending the British Empire in Africa (Gelfand 1961).

The church has also established various departments to contribute to the livelihood of the people. These include the Education department which oversees all mission schools, HIV/Health desk in charge of hospitals, Mission desk responsible for all mission work, the Women's desk, Men's desk, Youth desk, Justo Mwale Theological University

College to train church ministers and Diaconia department which is responsible for community development work.

5.6.1 RCZ Diaconia Department (RCZDD)

The Diaconia department was established by the Reformed Church in Zambia (RCZ) in 1989 at a Synod meeting held at Katete Secondary School in the Eastern Province. The main aim of the church in establishing this department was to fulfil its missionary mandate of educating God's people for personal spiritual growth and also to serve one another and the needy in society with justice and compassion. Since its establishment in 1989, the department has evolved as a Planning and Development wing until 2001 when the functions for community schools were alienated to form an independent department called Reformed Open Community Schools (ROCS). The Christian Reformed World Relief Committee (CRWRC), an American Christian faith-based organisation was instrumental in helping the Reformed Church in Zambia (RCZ) to establish the Planning and Development Department by seconding a development consultant who came to work with the church in 1991 (RCZ Pastoral letter, 1990).

The RCZ Diaconia department (RCZDD) is supervised by the Board appointed by the church. It has 14 full time members of staff headed by the Director operating from the national office in Lusaka. The Reformed Church in Zambia Diaconia Department (RCZDD) pursues three main programs: Agriculture and Food Security programme, Diaconia Development and Primary Health Care. The Maposa food security project which is the subject of review in this research is one amongst the many projects RCZDD is implementing throughout the country.

5.7 EVALUATION FRAMEWORK FOR THE FOOD SECURITY PROJECT

The framework for evaluating the Maposa food security project comprised of the following:

- (a) A theoretical overview of a case study methodology.
- (b) A qualitative perspective of the food security review.
- (c) A general overview of the Copperbelt Province of Zambia.

- (d) A situational analysis of the study area.
- (e) A demographic survey of the study area.

5.7.1 Theoretical overview of the case study methodology

According to Struwig et al. (2001) in Sebolaaphuti (2005:48), the term ‘case study’ implies that only a limited number of individuals or groups of people have studied intensively the issue at hand or have investigated fully a challenge affecting a selected community. The case study approach is defined as an all-inclusive and intensive study of one or a number of individuals. In addition to what Struwig says Bassey (1999) and Stake (1995) both argue that a case study allows the researcher to gather adequate information in a systematic way to facilitate understanding of how the individual functions, interacts and operates as a single unity of society.

Huysamen (1994: 169) also makes a valid contribution when he says that case studies are centred on understanding the uniqueness and complexity of the case. He points out three aspects regarding conducting a case study and these are:

- (a) A case study should be well defined with firm boundaries.
- (b) Case study is more inductive in searching for recurring patterns and consistent regularities.
- (c) A case study may use triangulation to validate the findings. Flick (2007: 55) explains that triangulation is a procedure combining different methodological approaches.

Despite its strengths, the case study approach also has limitations. One such limitation of a case study is that it cannot be generalised to the broader population as the sample is not selected through probability procedures and, therefore, not representative of the population. On the other hand, it may be generalised (Yin 2009) in Sebulaaphuti (2005: 61).

According to the Oxford Advanced Dictionary (2010), a case study is defined as a detailed account of the development of a person, a group of people or a situation over a period of time. This means that a case study may involve the study of the grassroots reality such as the lives and culture of the group of people being studied.

Denscombe (1998) in Sebolaaphuti (2005:48) further points out that a case study should be self-contained with boundaries. The basic rationale underlying the case study approach is that the researcher is able to tackle relationships and social processes which they may not discover with standardised approaches and predetermined response categories. Therefore, the analysis is holistic and not based on isolated factors, since the researcher probes deeply and analyses multifarious phenomena. This view is also advanced by Cohen and Manion in Bassey (1999).

However, Matimba (1997:22) in Sebolaaphuti (2005: 49) explains that a case study methodology has its own setbacks. For example, in a case study, the researcher should have substantial information on the subject or issue under investigation in order to compare the relationships observed in the study with existing literature and further check for consistency. Nonetheless, case studies are handy where problem significance is of utmost importance, as compared to precision as emphasised by qualitative methodology.

A further definition of a case study is that it is very much like detective work. This means taking everything to be important and thus weighed and sifted and checked or corroborated. Gillham (2000: 32) explains that in an ethnographic methodology, the researcher becomes an insider giving a detailed and accurate description of the prevailing situation.

Therefore, in this study, the researcher will engage this approach and thus will observe and describe in detail the food security survey in the study implemented by the Reformed Church in Zambia Diaconia Department (RCZDD) in Ndola rural for the period January 2007 to December 2010.

According to Yin (2009: 15) in Msangaambe (2010) explains that an ethnographer engages the grassroots reality of the lives and culture of the group being studied and has to interact with such people for a number of years. This worked very well for the researcher in this case study as he is an ordained minister and serving as a community development coordinator and has interacted with the community under study for over five years.

In addition, Algozzine and Hancock (2006: 33) in Msangaambe (2011:227) also write that a case study has three designs:

1. ***The exploratory design.*** This seeks to define the research question, a subsequent study or try to determine the feasibility of the research procedures.
2. ***The explanatory design.*** This seeks to establish cause and effect relationships.
3. ***The descriptive design.*** This attempts to present a complete description of the phenomenon with its context.

Out of the three designs of a case study noted above, the researcher finds the descriptive design more applicable to the food security survey though the other two designs will also be engaged at some point, regardless of their description because of their ethnographic nature. The selection of the descriptive design in this case study is based on the fact that it targets a clear presentation of the central research question and at the same time, points out the causes and effects.

Gillham (2000: 13) in Msangaambe (2011: 228) also states that a case study is a main method. Within it, different sub-methods are used, such as: interviews, observations, documents and record analysis and work samples. The researcher has employed the methods of interview, observation, document and record analysis in this case study.

On the other hand Yin (2009: 14-160) in Msangaambe (2011: 229) cautions as he says that case study research has its own problems. He notes four challenges of a case study:

- (i) A case study lacks vigor to the extent that the researcher can become sloppy, disregarding systematic procedures.
- (ii) A case study provides little data by scientific generalization.
- (iii) A case study does not include randomized fields of trials or true experiments which point to the non-quantifiable outcomes common in case studies.
- (iv) A case study has been proven to take too long a time. As such, they produce massive and unreadable documents due to a congestion of data. But this will not always be the case, especially when the researcher is well equipped with reporting skills that portrays a precise and valid research outcome.

Yin (2009: 16) in Sebulaaphuti (2005: 61), on the other hand, commends the use of case studies because they can offer important evidence to complement experiments.

In agreeing with Yin's explanation of a case study, Gillham (2000: 80) states that case studies are not confined only to qualitative data and their analysis, but can illuminate the descriptive efforts of case studies.

A case study has been identified as the most befitting tool for this particular research in the full light of its strengths and weaknesses. It has basically been selected as a suitable tool to describe the praxis of community development by the Council of Churches in Zambia.

August (2010: 7) argues that community development in the context of the above discussion should be defined as a method for the following reasons:

- (a) In the process of development, community development mobilizes resources such as physical, financial and human in order to address basic human needs by means of combined efforts of outside development agencies and members from within the community.
- (b) When it comes to service provision, the community development method relies to a large extent on the individual. People can provide services by means of their labour when the authorities cannot oblige.
- (c) Community development as a method is a unique comprehensive approach which makes allowance for the cooperation of different agencies in order to embody an integrated approach to local development.
- (d) Community development as a method creates community organizations.

This case study methodology will guide the data development process to answer the research question: 'How should the church and its context participate in a practical way in transforming communities to become food secure where there is poverty and food shortage?'

This study has used the qualitative data collection methodology. This methodology requires that the researcher has a long term interaction and observation of the

community under study, seeking to discover a practical way of engaging small holder farmers in Zambia to maximize their own community development capacity. Sustainable community development does not require a top down approach but rather encourages a bottom up approach. This means that the poor people themselves must initiate their own development (Stott 2006: 176).

In addition, Myers (2003) explains that transformational community development takes place when poor people understand what it means to be made in the image of God and the fact that they possess a gift that can be developed into a fruitful vocation.

5.7.2 The qualitative perspective of the case study

This food security survey lasted for four months to allow a natural process to occur through the full participation of the farmer beneficiaries, community committee, the Agriculture Volunteer Workers and the Development Facilitator in the data collection process. The researcher believes that this process was not just an academic exercise but also an exploratory exercise that empowered the community in the study area at the end. The three groups of people engaged in the food security survey were as follows:

- (a) The farmer beneficiaries in the Maposa community. This community falls under the Baluba Ward in Roan Constituency of the Luanshya district. It has a total of 561 households with a population of 5 166 of which 1 707 are male, 1 701 are female and 1 758 are youths (CSO: Census of Population and Housing, 2010).
- (b) The community committee as major stakeholders. These were involved as participants who provide leadership in the running of the food security project. This was a special group to the research because they are the ones who formulate the by-laws and also provided historical background information of the project and its progression.
- (c) The Development Facilitator and the Agriculture Volunteer Workers (AVW's). The researcher involved these people on the basis that they were key persons in conducting activities in the food security project. These were actually selected to be research assistants in data collection and validation of information gathered.

5.7.3 Engaging Farmers, AVW's and the Community Committee in the Food Security Review

For a period of four months, March to June 2011, the researcher with the assistance of the development facilitator, together with the farmer beneficiaries, conducted the food security survey. Due to distance to the project site from the researcher's base and the cost involved, the food security survey was scheduled to take eight full days. This translates into two meetings per month. The meetings were planned to be conducted in the form of workshops and focus group discussions to allow free participation of all the members of the food security survey.

The main goal of the workshop and the focus group discussion was to allow members in the food security project to answer the questionnaire. The participants were divided into three groups to allow each member to participate freely without intimidation and arrive at a consensus. At some point, the researcher conducted individual interviews with members in order to have clarity on some points raised by the review members during the focus group discussions.

According to Osmer (2008: 61-63) the skill of interviewing is a very important part of attending qualitative research. The interview is the conversation *between* in which one of the parties is seeking information from the other for a particular purpose. Osmer argues that a good interviewer is an active listener who attends carefully to the verbal and nonverbal responses in the interview and guides the conversation without controlling it. The structure of interviews can vary, but in this research, semi-structured interviews were used. This method involves asking both open-ended and closed-ended questions in the planned sequence. The questions are adapted to the emerging flow of the conversation.

In line with what is stated above, the researcher conducted eight meetings at Maposa communal shade, which is the meeting place for all the farmer groups in the area. The first two meetings were held in March 2011. These meetings were held basically to orientate the farmer group regarding the objective of the food security review. Open-ended questions were asked for the sake of allowing the participants to use their own interpretations (Dawson 2009: 88). The group workshop approach was adopted for the answering of the questionnaire. This helped to avoid the situation of having some

questions in the questionnaire not answered, which is common with questionnaires (Gillham 2000).

The group members went through the questionnaire together and areas which were not clear were clarified. Each focus group selected a chairperson and a secretary who were given a task to report group findings in the plenary session. Attendance during the first two meetings held in March 2011 was good.

During the first meeting, the group had to agree on how the whole process was to be conducted. The following is the guide designed by members of the focus group discussions:

- (a) The group agreed that the whole survey was to be conducted in two languages, namely '*Bemba and Nyanja*'. These are the common languages spoken in the Copperbelt Province of Zambia.
- (b) At the close of each session, an attendance list was to be signed by each participant.
- (c) The farmer group agreed to invite and encourage other members of the food security group to attend the review exercise.
- (d) Members agreed that the food security survey should be conducted in the month of April 2011 for eight days, two days per week as farmers had a lot of work that needed to be done in their own fields at that time. The month of May 2011 was set to prepare a draft report of the food security review by the researcher and the assistants. A workshop to discuss the draft report was scheduled at the end of May 2011 for the farmers' input. The month of June was set for preparing the final report.

At the end of the planning meeting which lasted two full days in March 2011, all stakeholders expressed satisfaction with the whole process and the guiding principle for the survey exercise to be successful. (See Appendix 2, Briefing notes for the planning meeting).

5.7.4 The Food Security Project Review

The food security survey was conducted in April 2011 as agreed upon by all stakeholders during the planning meeting in March. This survey was held in April for

two days each week. Twenty members of the food security project attended the meeting. The questionnaire was distributed to the group leaders. Three groups were formed as follows: Farmer beneficiaries formed one group of ten members. The development facilitator, AVW's formed one group and the community committee formed another group. Each group was tasked to choose their own secretary who, at the end of the session, would give the group report.

After receiving guidance from the researcher, the group began answering the questionnaire using the flip chart so that each member of the group was able to follow the discussion and agreed points. This was an exciting, refreshing and encouraging exercise as farmers could grade themselves. What was more interesting was that farmer beneficiaries could debate about instances where they felt facts were being misrepresented.

The review exercise was conducted in the form of a focus group discussion. After the groups concluded their group sessions, a plenary session followed up. The group secretaries were accorded an opportunity to present the group reports. At the end of each presentation, the researcher gave chance to members to ask questions or comment on anything that was not clear.

In the May 2011 the researcher, together with the development facilitator and AVWs, spent most of the time compiling the draft review report. At the end of May 2011, a final meeting was called and all the stakeholders in the food security project attended this meeting. During this meeting, one Diaconia Board member and a staff member from Tear Australia (Diaconia department partner) were also present. The presence of these people added value to the whole survey process.

The draft report was presented to the group by the researcher and the group was asked to give input, especially about correcting issues which were misrepresented. This task lasted the whole day as there were many issues which needed to be put in good order. At the end of the workshop, all members endorsed the draft report as a true reflection of the farmers' collective opinion. The researcher thanked all members who participated and spent their quality time to review the food security project. The fact that this was not the researcher's project, but theirs, was emphasized. In June 2011 the researcher

spent time working on the final report which reflects the findings of this food security survey.

The Maposa community where the food security survey was conducted is located in the Luanshya district in the Copperbelt Province of Zambia. The following section presents an overview of the Copperbelt Province of Zambia.

5.7.5 An overview of the Copperbelt Province of Zambia

The Copperbelt Province is 31 328 sq km. It is situated in North-Central Zambia and located south-west of the Katanga Province of the Democratic Republic of Congo (DRC). This province of Zambia is called Copperbelt because of its copper mining activities. Zambia became independent from Britain in 1964. Since then, copper mining has been the main economic activity for the country as a source of foreign exchange. The 31 328 sq km (12 096 sq miles) province occupies the upper portion of the Kafue River basin on the central plateau of Southern Africa, some 900 to 1 500 m (3 000 to 5 000 ft) above sea level (World Bank Report 1994).

The rolling terrain of the Copperbelt Province is covered by Savannah vegetation, reflecting a markedly seasonal pattern of rainfall. The soils are not very good for farming due to pollution from the mines. The natural forest has not been spared either as trees are being cut down by charcoal burners who sell these commodities to the city dwellers leaving most of the land bare, resulting in soil erosion and reduced agricultural productivity (Chizyuka 2006).

The Copperbelt Province lies within the Miombo woodlands eco-region with a science based global ranking as one of the earth's most biologically outstanding terrestrial, freshwater and marine habitats. Experts agree that the area's value in terms of biodiversity, species endemism and carbon sequestration, among others, make this an important area of conservation focus. Covering an area of 3.6 million square km and falling between ten Eastern and Southern African countries, the Miombo is an amazingly diverse tropical woodlands and wetlands environment. In response to the growing demand for agriculture land on the Copperbelt, the Zambian government is de-gazetting some protected forest areas to free up land for resettlement and for agriculture related activities (Chizyuka 2006).

In terms of population, the Central Statistics Office census report (2010) indicates that the Copperbelt Province has a population of 2 958 623 people. It is the second largest populated province in Zambia, with Lusaka Province being the largest. The largest cities in the Copperbelt Province and which form a conurbation include Ndola, Kitwe, Luanshya, Mufulira, Chingola and Chililabombwe.

The Lamba and Lala speaking people are the indigenous ethnic groups of this province, but the dominant group among the extremely diverse tribes is the Bemba. The languages spoken in this province include Bemba, Kaonde and Nyanja. There are different tribes which live on the Copperbelt today. The reason for this ethnic diversity on the Copperbelt Province is due to the immigration of people from other provinces and neighboring countries who came in search of employment in the mines. These people have settled both in the urban and the rural areas and have no plans to return to their places of origin (Chizyuka 2006).

This province is the center of an important mining industry and constitutes Zambia's economic heartland. Cobalt, selenium, and precious metals are extracted as by-products of copper mining. The province has a diversified industrial base specializing in the production of consumer goods and primary processing of minerals. Small-scale peasant agriculture predominates in the small rural communities, although there are also substantial commercial farmers in the province (Chizyuka 2006).

Zambia's economic engine since independence in 1964 has been dependent on Copper mining. In more recent years, however, the economy of the country has declined due to the downturn in the mining industry the period between 1970 and 1990. The situation currently appears depressed in the province since several towns are considered to be ghost towns because there are no meaningful economic activities taking place in the mining towns on the Copperbelt. The province generally has very high levels of unemployment (Arndt 2010).

Nowhere in Zambia was the impact of the global financial crisis more severe than in the copper and cobalt rich province of Zambia. The province has for a long time been Zambia's economic hub. When Zambia's economy grows, it means mining is booming in the Copperbelt Province. Copper accounts for 80% of Zambia's foreign exchange earnings and has since 2003 been the main driver of an annual economic growth rate of 5% (Pungwe 2009).

Pungwe further notes that at the peak of production in the 1980s, Zambia, Africa's largest copper producer, used to produce about 750 000 metric tons of finished copper annually. Output dropped to 200 000 metric tons in the 1990s. When the copper price enjoyed a renaissance at the beginning of this decade, the mines again became the major employers as production rose to more than 600 000 metric tons with government projecting one metric ton by 2010.

The global financial crisis affected copper production; as a result this projection was not realized. A steep fall in demand and prices for copper on the London Metal Exchange led to government collecting revenue of just 64 million dollars from copper in 2008 rather than the targeted \$ 415 million. The end result of this revenue loss is that the country's mining companies have either reduced production or put the mines on care and maintenance, citing the global slump, which has seen copper prices fall at the London Metal Exchange from a record high of nearly \$9 000 per metric ton between 2005 and 2007 to about \$3 000 per metric ton in 2010.

Luanshya Copper Mines (LCM), a joint venture of the Swiss-based International Mineral Resources of Israel, closed its operations in December 2008, resulting in 1 700 miners retrenched. Mopani Copper Mines (MCM) retrenched up to 1 000 workers while the country's biggest mine, Konkola Copper Mines (KCM), owned by the London listed Vedanta Resources, laid off 700 miners after shutting down its smelting plant. Many of the retrenched miners have resorted to informal trading and agriculture as a means of livelihood (Pungwe 2009).

The IRIN humanitarian news report (2009) indicates that Zambia's mines were major employers in recent years when the copper price enjoyed a renaissance, encouraging expansion of the mining industry and creating new jobs. But when copper prices were

dropped in the 1980s, the government had no money to provide cheaper social amenities to its citizens.

According to Soko (2010: 36) the average per capita income declined by 2.5% per annum from 1975 to 1991 and Zambia's external debt rose from US\$627 million in 1970 to US\$7.2 billion in 1990. This resulted in Zambia borrowing heavily from the World Bank and the International Monetary Fund (IMF), hence sinking the country even further into economic problems as many Zambians became more impoverished than before.

In addition, the World Food Program (WFP) report on Zambia (2009) reveals that Zambia, rated 164th on the United Human Development Index, is classified as a least developed and highly indebted poor country with a per capita Gross Domestic Product (GDP) of US\$1 500 (WFP 2010).

Furthermore, Devereux (2001:4) indicates that data prepared for the World Development Report (2000) show that nearly half of the population of Sub-Saharan Africa lives on US \$ 1 per day, which is below acceptable standards of living determined by the World Bank. The Sub-Saharan region is regarded as one of the poorest regions in the world. Zambia is one of the countries of Sub-Saharan Africa and is rated as the least developed amongst the countries in the region. The majority of the poor people in Zambia live in the rural areas of the country practicing subsistence farming. These people have the capacity to produce food, but whether they are always wise to depend on farming for their food needs is a matter of debate.

Kachingwe (2009) also argues that the privatization of the mining sector has led to increases in retrenchments resulting in many miners losing jobs and income. Not surprisingly, environmental concerns have taken a back seat to the business of short-term survival. The local population is typically ill-equipped and ill-prepared to deal with the consequences of the closure of the mines and to engage in other livelihood activities. The retrenched miners now venture into informal economic activities such as subsistence agriculture and extensive charcoal burning which involves environmentally unfriendly practices. Furthermore, socially destructive activities such as scavenging and

vandalism have become more prevalent in the province, threatening the sustainability of any environmental remediation measures.

According to the Norwegian Centre for Human Rights (2002) report it is estimated that 90% of the rural poor people on the Copperbelt practice subsistence farming. Though this is the case, records indicate that the worsening economic conditions in the Copperbelt Province due to the liberalization of the economy have contributed greatly to the undue pressure on natural resources such as land and forests in the province. For the rural dwellers of the province, life is not as easy as one would imagine.

The social livelihood of the people living in the province is logically bound to the economic performance of the mining industry. As the economic performance of the mining industry started declining from the 1970s to the 1990s, the general living standards of the population deteriorated too. Since many of the public services were provided by the mining companies, either directly or indirectly, the social and public amenities in all mining towns on the Copperbelt have also deteriorated. This Copperbelt province was once the area that guided the fortunes of Zambia's prosperity. But as noted above, over-dependence on copper as the main export and foreign exchange earner has turned the country's fortunes into economic and environmental hardship (Devereux 2001:4f).

Chizyuka (2006) points out that the oil shocks of the 1970s, coupled with the eventual crash in global copper prices, exposed Zambia's fragile economic growth base, casting the economy into a downward spiral that ended with a near total collapse of its mining industry by the end of the 1990s. The economic and social impact of the Copperbelt's changed fortunes as a result of the down fall of copper prices at the London metal exchange was dire as scores of mine workers were suddenly unemployed with no immediate options of alternative livelihoods. Many turned to the exploitation of natural resources for survival. Conversion of forests for small scale agriculture soon became a prominent feature of the Copperbelt. It is estimated that 70-80% of the inhabitants of the Copperbelt depend on subsistence agriculture.

Though the Copperbelt Province is today faced with complex economic and environmental challenges, this region is Zambia's most biologically diverse, especially

as it is positioned at the source of the Kafue, which is one of Zambia's largest river basins. People of the Copperbelt Province need to benefit more from the flow of the environmental goods and services provided by the resources of the region, such as water for domestic and industrial use, irrigation, electricity generation and fisheries.

Zambia Consolidated Copper Mines (ZCCM) was the largest employing company on the Copperbelt and Zambia at large until the year 2000 when the situation changed. ZCCM controlled and managed all the copper mines on the Copperbelt. These included Konkola Copper Mines (KCM), Luanshya Copper Mines (LCM), Nchanga Copper Mines (NCM) and Bwana Mkubwa Copper Mines (BCM). As noted, the oil shocks of the 1970s coupled with the eventual crash in global copper prices exposed Zambia's already weak economy, thus casting the country's economy into a downward spiral that ended with a near total collapse of its mining industry by the end of the 1990s (Chizyuka 2006).

As copper prices at the London Metal Exchange fall sharply, the mining industry started dwindling and this resulted in massive retrenchment of the miners. The situation worsened during the Second Republic under the reign of the late Second Republican President, Dr. Fredrick Titus Jacob Chiluba with his Movement for Multi-party Democracy (MMD). He took over the governance of the country from Dr. Kenneth Kaunda and the United Nations Independence Party (UNIP) who had ruled Zambia since independence in 1964. During the reign of Dr. Chiluba, the government of Zambia privatised and sold most of the state run companies including the mines to local individuals and foreign investors. Roan Antelope Mining Cooperation of Zambia (RAMCOZ), a Binani group of companies of India acquired Luanshya mines in October 1997 from the ongoing privatisation of the Zambia Consolidated Copper Mines at that time.

The end result of privatization was that the Zambia Consolidated Copper Mines (ZCCM) was reduced to the role of a care taker for the mining investments as all mines were run by private investors. It is obvious that the new owners of the mines wanted to maximise profit and reduce overhead costs and therefore they lay off excess labour force. Some of the investors who acquired the mines had no experience to run them. Such was Binani group of companies who bought Roan Antelope Mining Cooperation

of Zambia (RAMCOZ) of Luanshya which ended up with huge running expenses, eventually failed to pay suppliers and employees and the mine was prematurely closed, leaving a huge labour force stranded without terminal benefits paid to them (<http://www.ramcoz.com>).

According to the *Zambian Food Security Monitor* (2008) indicates that food insecurity in Zambia is worse among the rural poor small householder farmers who depend on subsistence agriculture for their own food production. Across the population stratum, however, the other most vulnerable groups to food insecurity are the aged, female-headed households, orphans and generally the youth. The food security monitor points out that there are numerous factors which contribute to household vulnerability to food insecurity in rural areas. These include household income levels, age of household head, education level of household head, gender of household head, size and structure of household, labor constraints due to poor health and effects of HIV/AIDS, food production levels, food prices, household food state and also distance to food markets.

Afro News of 31 October 2005 reports that the number of people in need of food assistance in the rural areas of Zambia has now climbed to at least 1.7 million due to crop failure and rising food prices. This figure could be doubled in 2011 as food insecurity among most rural dwellers has become the order of the day. As the food crisis grows more severe, young rural girls run away from parents and guardians living in the outskirts of town and are increasingly found in urban nightclubs where they hope to earn petty revenue for the family by selling sex. AIDS is already having a strong impact on the rural economy. Agricultural production at household level has been crippled because people are either too sick to work and families are forced to spend meager assets on medicines and funerals rather than seeds or fertilizer. Life expectancy in Zambia has fallen to a mere 37 years (:<http://www.photius.co/ranking/healthlife>).

5.7.6 Demography of Luanshya district and Maposa community

The population of Zambia has been increasing from 7 759 161 in 1990 to 9 885 591 in 2000. In 2005, the population of Zambia was projected to be 11.4 million. About 65% of the population resides in rural areas while 35% were in the urban areas. Most of the population in Zambia is concentrated along the line of rail stretching from the Southern Province and Central Province up to the Copperbelt Province. The most urbanized area

in Zambia is Lusaka with 81% of its population residing in the urban area. It is followed by Copperbelt Province with 79%, Central Province, 35% and Southern Province with 21% of the population residing in urban areas respectively. The Zambian population as at 2010 Census report is estimated at 13 046 508. This gives an average annual growth rate of 2.8% between 2000 and 2010. Of the 2010 population census, 49% were males and 51% were females (CSO 2010: 16, 30, 32).

According to the CSO (2010), the Copperbelt Province has 384 035 households of which 973 770 are male, 984 853 are female and 998 040 are youths. The Luanshya district, which is the study area, has two constituencies namely Luanshya and Roan respectively. Roan constituency has twenty-eight wards. Roan constituency has 10 736 households translating into 27 729 male, 25 548 female and 28 886 youths giving a total of 85 163 people. The community under study falls under Baluba ward in Roan constituency. Baluba ward has a total of 561 households translating into 1 707 adult males, 1 701 adult females and 1 758 youths giving a total population of 5 166. Table 1 below shows the population estimates of Roan constituency-Baluba ward, which includes the Maposa community (Case Study).

Table 2: Population Distribution of Luanshya District

District	Constituency	Ward	Households	2010 Population			Population 18 yrs
				2010 Population	2010 Population	2010 Population	
Luanshya	Roan			2010 Population	2010 Population	2010 Population	
		Lumumba	1,291	3,370	3,600	6,970	3,654
		Kafue	1,541	3,899	3,973	7,872	3,879
		Chilabula	393	839	817	1,656	778
		Mpatamatu	998	2,318	2,557	4,875	2,575
		Justine Kabwe	770	2,010	2,117	4,127	2,059
		Nkulumas himba	515	1,323	1,433	2,756	1,435
		Baluba	561	1,707	1,701	3,408	1,758
		Milyashi	1,220	3,086	3,241	6,327	3,219
		Ngebe	632	2,014	2,092	4,106	2,241
		Kansengu	806	2,472	2,501	4,973	2,504
		Kawama	632	1,020	874	1,894	997
		Muva Hill	337	826	746	1,572	782
		Constituency Total	10,736	27,729	28,548	56,277	28,886

Source: (Zambia 2010 Census Population and Housing).

From Table 1 above, which is an extract of the 2010 census of population and housing preliminary report, the Maposa community which falls in Roan constituency, the Baluba ward of Luanshya district has a total of 561 households of which 1 707 are adult male and 1 701 are adult female. 1 758 are youths giving us a total population of 5 166.

The percentage distribution for Maposa community population shows that 34% are youths, 33% are female adults, 21% are male adults and 12% are children respectively. The table below shows the percentage population distribution for the Maposa community.

Table 3: Percentage Population Distribution

Youth Groups	Female Adults	Male Adults	Children
34%	33%	21%	12%

Further analysis of Maposa community reveals that the community is predominantly over populated by youths compared to other age groups. The youths alone account for 34% of the community population followed by the adult females who account for 33%.

Maposa community is a settlement area for retrenched employees from the mines and other companies within the Copperbelt Province of Zambia. As employees were retrenched, they chose to settle permanently in this area and engaged in small-scale farming.

Luanshya lies about 337 kilometers to the north of Lusaka, the capital of Zambia. The boundaries of Luanshya district are defined in the provincial and district Act. Cap 286 of the laws of Zambia. Luanshya district shares boundaries with Ndola district on the North East, Masaiti district on the South and Kitwe district on the North West. Luanshya district covers approximately 100 760.87 hectares of land and lies at 1 225 metres above sea level. It is situated between latitude 13.8 South and longitude 28.25 East.

The Town Management Board was conferred in 1930 following the discovery of copper at Roan Antelope by Collier in 1927. The establishment of the local authority was a response to the growing mining activities in the late 1920s. The local authority was given the status of the municipality in 1953. Since that time, Luanshya district

expanded in terms of population and economic activities. When the economic activities started dwindling in the late 90s, many miners were retrenched. Some of the retrenched miners were not prepared to leave employment and they chose to settle in areas such as Maposa within the Copperbelt Province according to the Luanshya District Corporate Brochure (2008).

Maposa community has been in existence for over twenty years now and it has kept on growing as more workers are being retrenched from the mines. This small holder farming community earns their livelihood through subsistence agriculture that does not make them food secure at all. Though the community is located in a rural area, its organization structure is very different from the setup of a village. Under the old arrangement, members of the community selected their own leaders. Until then, there was a ward chairperson who was in charge of the general administration of the community. The ward was further divided into sections. Each section had a chairperson who reported to the ward chairman. Basically, the area is not under any chieftdom, meaning there is no chief to provide customary leadership, as such; the area is under the Luanshya district council (Luanshya District Corporate Brochure (2008)).

The current community structures are composed of neutral bodies called the Residence Development Committee (RDC). The RDC is composed of key developmental stakeholders who are locally/or community based. The stakeholders include the church, Community School Parents Committee (CSPC), volunteer teachers, health workers and Cooperatives. The committee is headed by a chairperson and other selected members of the community. Alongside the Residence Development Committee (RDC), there is a political office, the office of the area councilor, who happens to be an ex-official in the RDC. The office of the area Member of Parliament as a higher political office is also an ex-official for the Residence Development Committee for this constituency.

5.7.7 Situation analysis of the study Maposa community

According to Elliot (1999), people are regularly portrayed as both the victims and unwilling agents of environmental degradation in developing regions. Their environmental concerns are those associated with immediate survival needs, such as fuel, access to clean water and sanitation or securing productive lands. Their poverty restricts the options they have in terms of resource management. They have to cultivate

marginal lands, live in unsafe housing or clear remaining woodlands in order to survive in the short term, often with detrimental effects on the resource base and their own livelihoods. So far, the poor are increasingly concentrated in areas where the characteristics of soils demand high levels of investment in order to become productive, on lands of low commercial value, or in frontier areas such as forest edges, where infrastructure and other services are underdeveloped. To date, rural poverty has exceeded urban poverty.

Given the economic background of the mining province, Maposa community is struggling as a poor, rural neglected community. The community, according to the demography is made up of the youths who account for a big percentage and also the adults who find a living through the practice of unsustainable agricultural practices. The main source of livelihood is unsustainable agriculture which does not enable them to produce enough food to feed themselves.

Devereux (2001: 4) notes that the majority of the poor in Africa are small holder farmers who have the capacity to produce food but are unable due to various challenges. One of the challenges is the farming practices of the small holder farmers.

5.8 CONCLUSION

The notion of food from the theological ecclesiological perspective was the subject of discussion in Chapter five. This chapter presented evidences from the Bible which supports the notion of food and it therefore, forms a firm foundation for the churches participation in transformational development through the promotion of good agriculture practice to enhance household food security among small holder farmers currently wallowing in abject poverty in Zambia. This evidence from the Bible will therefore be put to test in the Maposa food security project implemented by the Reformed Church in Zambia (RCZ). The following chapter provides guidelines for .empowering households through food security: Lessons from Maposa community.

CHAPTER 6

GUIDELINES FOR EMPOWERING HOUSEHOLDS THROUGH FOOD SECURITY: LESSONS FROM MAPOSA COMMUNITY

6.1 INTRODUCTION

In the previous chapters, the subject of household food security was well defined by establishing its dynamic transformational role in the lives of the rural poor households. Across the globe, sustainable agriculture has remained a very important part for improving food security and economic development. Not only does agriculture feed the entire population of a nation, but it also correlates and interacts with other industries. A country is only actually socially and politically stable when its citizens have food available all year round. Food security is a vital requirement and no nation can effectively grow without a stable agricultural system in place and without sufficient food for its citizens (Lombe 2010: vii).

Devereux (2001: 4) argues that a good agricultural system will remain a core sector for food security, not only as a source of food, but also of employment, a source of raw materials and of foreign exchange essential for economic development.

According to FAO (2011) agriculture still accounts for a quarter of the Gross Domestic Product (GDP) in Sub-Saharan Africa and thus remains one of the primary means for growth and poverty reduction.

If agriculture is well planned and farmers are supplied with the right quality of seed at the start of the farming season, small holder farmers can surely be expected to produce a good harvest. This makes them food secure and reduces food insecurity among them. In a bid to boost food security and increase yields, farmers should reduce their dependence on rain fed agriculture by using irrigation.

According to the FAO report on Zambia (2011), some small holder farmers have over the years engaged in conservation farming, an initiative that the Food and Agriculture Organization (FAO) is trying to promote in Zambia.

Therefore, the goal of this chapter is to provide the guidelines for empowering households through food security: Lessons from Maposa community. The following are the guidelines for implementing an ecclesiology of food security by Reformed Church in Zambia (RCZ), Council of Churches in Zambia (CCZ). These guidelines include the following:

6.2 FARMING PRACTICE

6.2.1 Promotion of Sustainable Agricultural Practices:

This type of farming practice has many advantages that are associated with it such as increased farm output, productivity and environmental sustainability. The practice of sustainable agriculture practice which the church should promote includes the following:

(i) Minimum tillage: This type of conservation farming requires the use of a special hoe (which has a hoe and pick combined) called the '*chaka* hoe'. Since these hoes are not readily available on the market for the farmer, the church can make special orders from the manufacturers to purchase and distribute among the farmers at a fee so as to generate a revolving fund among the farming groups.

(ii) Organic and animal manure: Organic manure in the form of agro-shrubs should be adopted by the church as part of the project's intervention. Animal manure should be provided adequately through animal restocking system among the small holder farmers to use in their fields instead of chemical fertilisers.

(iii) Crop rotation: This type of conservation farming method involves the planting of different types of crops in a sequence on the same piece of land specifically legumes and cereals so that crops can benefit from one another.

6.2.2 Provision of adequate number of goats.

In order to enhance manual production for application in the fields, it is advisable that the church should provide an adequate number of goats to farmer beneficiaries in the project. The standard practice used by other players with a lot of experience in promoting livestock among small-scale farmers such as Heifer International recommends that a minimum of 5 she-goats should be given per household. This is what came to light during conducted interview by the researcher with Heifer international in Ndola.

6.2.3 Provision of training in agro-forestry with credit support for the purchase of agro-shrubs:

Farmers can only adopted agro-forestry as part of soil conservation if the church can be able to provide credit for the purchase of agro shrubs.

6.2.4 Grain storage facilities management.

In promoting household food security, the church should put up well designed storage facility in order to preserve harvested crops from spoilage by the household farmers. Proper grain storage is a means to secured food security in the community.

6.2.5 Establishment of Savings Schemes to teach farmers Small Business Group Dynamics:

The church in its strategy to enhance economic empowerment of farmer groups should form Savings Groups with membership of not more than 20 members per group for cohesiveness. Experience on the ground has proved that the larger the group, the less cohesive it is, and the less cohesive the group is, the higher the chances of misunderstanding and business failure.

6.2.6 Securing land tenure security

According to Oxfam (2002:24) Zambia's land tenure system is a product of the colonial history, which dates back to the days of the British South Africa (BSA) Company and the eventual British crown administration. The BSA Company created freehold titles for the best areas of the country and customary tenure for the natives.

Land ownership among the majority of small holder and emergent farmers is held in common with inherited rights. In other words, land tenure arrangements under traditional agricultural systems in Zambia are still under customary law. This puts emphasis on the inherited rights of men to have access to land in order to grow food for their families. This type of land tenure system excludes women and female headed households from having inherited rights to the use of land. It is common knowledge that in Zambia, like in most African countries, women carry out the main agricultural activities than the men (Jansen, 1983).

According to Hansungule (1998: 2- 3, 6-15) it is reported that there is land pressure in many districts of the Copperbelt because most of the retrenched workers find themselves practicing subsistence farming in the outskirts of the cities. This creates a problem of land tenure insecurity for these people as many of them do not have a clear understanding of the process of land acquisition.

In addition, Madeley (2000) argues that small scale farmers are often pushed onto more fragile land with poor soils. Causes of soil infertility on the Copperbelt include shortage of manure, tilling practices, continuous cropping of the same land, limited crop rotation, overgrazing and the indiscriminate cutting off of trees.

In Zambia, with the exception of customary land, all land is under the custody of the government through the ministry of lands. As owner of the land, the government through the ministry of lands, issues title to land to any person or organization who may apply for a title deed. The Government of the Republic of Zambia (GRZ) regards any untitled settlement illegal. Statistics obtained through the PRA conducted by Oxfam (2002: 2) revealed that only 5% of people who have settled on pieces of land have title to land in the Copperbelt Province while 95% of the settlers have no title to land. The reason behind this scenario is that land in Zambia is mostly acquired by those who have money, the politicians and those who command influence in society. The poor, on the other hand, who have no money to buy a piece of land, remain without ownership to land.

The community under study can be described as such a community which has settled on a piece of land without title deeds. Though this community in question has lived in this

settlement for many years, they are still regarded as illegal settlers in accordance to the current Land Act of 1995 of the Republic of Zambia which states that any settlement without title deeds is illegal. As a result, many potential small-holder farmers remain resource-poor. They are less productive and not innovative enough to enhance their livelihoods through agriculture.

Duchrow (2004) argues strongly against the distribution of wealth which is going on in this world today. It has contributed to poverty escalation to alarming levels, especially in developing countries. He proposes as part of a solution to this problem that property should be for people and not for profit.

Land and fields in Maposa, like in any other place on the Copperbelt, are generally undulating and relatively flat. The area has sandy soils which make it very unfertile for crop production. This condition contributes to a low levels of agricultural productivity which directly affects the ability of households to produce enough food and become food secure all year round (<http://www.panda.org>).

Most households grow crops on a very small scale, mostly for consumption. Maize is the main food crop grown in this area. Other crops like groundnuts, cotton, beans and cassava are also grown but do not compare to the maize yields. Maize and other major crops are grown once a year under rain-fed conditions. The assessment report (2006) of the Reformed Church in Zambia - Diaconia Department points out notable challenges like education, water and shelter that the community under study encounters.

6.3 EDUCATION AND FOOD SECURITY

Transformational development that is sustainable and community based, focuses especially on the needs of children. When children have food, shelter, protection, and schooling and are valued and loved, a community thrives (De Beer 1998). Sadly, the report generated by the global campaign for education (2011), highlights that developing countries are on the brink of an education crisis with levels of access to education showing little growth.

UNESCO's latest Global Monitoring report (1 March, 2011) indicates that armed conflict across the world is robbing 28 million children of education by exposing children to widespread sexual violence, targeted attacks on schools and other abuses such as child labour and early marriages in the case of girls. Zambia is ranked 10th in the world regarding cases of early marriage for girls (*Zambia economist article of July 2011*).

The unstable political situation in Africa has negatively affected agriculture and food production and this impact on the education sector. Most children in the rural areas are out of school, not because of armed conflicts and widespread sexual violence, but rather because subsistence farming practice has rendered most families to be food insecure and economically incapable to provide support to their school going children. The government has also failed to provide quality education to rural areas, especially in a country like Zambia. This scenario has denied many children in the rural area an opportunity to realise their full potential regarding education. They are thus deprived of their rights as stipulated by the International Convention on the Rights of the Child (ICRC) to which Zambia is a signatory.

The United Nations International Children Education Fund (UNICEF)'s mission is to advocate for the protection of children's rights, to help meet their basic needs and to expand their opportunities to reach their full potential. UNICEF is guided in this process by the provisions and principles of the Convention on the Rights of the Child. Built on varied legal systems and cultural traditions, the Convention is a universally agreed upon set of non-negotiable standards and obligations. These basic standards, also known as human rights, set minimum entitlements and freedoms that should be respected by governments, especially in Third World countries like Zambia (UNICEF 2008).

These human rights are founded on respect for the dignity and worth of each individual, regardless of race, colour, gender, language, religion, opinions, origins, wealth, birth status or ability and therefore apply to every human being. With these rights comes the obligation on both governments and individuals not to infringe on the parallel rights of others. These standards are both interdependent and indivisible; no one can ensure some rights without or at the expense of other rights. The Convention on the Rights of the

Child is the first legally binding international instrument to incorporate the full range of human rights, civil, cultural, economic, political and social rights.

The UNICEF report (2008) points out that in 1989, world leaders decided that children needed a special convention just for them because people under 18 years old often need special care and protection that adults do not. The leaders also wanted to make sure that the world recognised that children have human rights too. The Convention sets out these rights in 54 articles and two Optional Protocols. The article spells out the basic children's rights which every child in the world should enjoy. Such basic children's rights include the following:

1. The right to survival. This entails that every child has a right to live under any circumstance and in any place. No one has the right to terminate the life of a child through any means.
2. The right to develop to the fullest. This entails that every child has the right to grow and reach maturity. Every child has a right to develop mentally, physically and socially given any environment in which the child is found.
3. The right to protection from harmful influences. This entails that every child has the right to protection by the adults from any harmful influences.
4. Every child has the right not to be abused, exploited and should be allowed to participate fully in family, cultural and social life.
5. Every elderly person is called upon to respect the views of the child. Every child as a human being is the bearer of the image of God and as such deserves to be respected by everyone.

The rights of children as spelled out in the Convention are inherent to the human dignity and harmonious development of every child. The convention protects children's rights by setting standards in health care, education, legal, civil and social services. The church and other civil societies should be seen advocating for the rights of the children especially for the children living in disadvantaged contexts like the study community.

In addition, the Millennium Development Goal (MDG)'s goal no. 2 calls for all governments to achieve universal primary education by 2015 because education is a fundamental human right. Every child is entitled to education as it is critical to the development of any individual and society and helps pave the way to a successful and productive future. Children's universal right on education can only be attained if

poverty and food insecurity among small holder farmers is addressed. It is a fact that no child can attend class with an empty stomach. (Stott: 2006). *Also see Appendix 11: Millennium Development Goals.*

Viewed from the theological perspective, the Bible also upholds the rights of the child. According to the gospel of Mt.19:15 and Lk. 18:16, Jesus is reported to have cautioned His disciples to uphold the rights of the child even to salvation as they should be allowed to encounter and experience Christ as their saviour. In the passage Jesus called them saying, ‘Let the little children come to me, and no one should forbid them for such is the kingdom of God’. In the book of Prov. 22: 6 and Deut. 4: 9, the Bible encourages adults to commit themselves to providing education to the children as this is their right (Bible 1984).

6.4 WATER AVAILABILITY FOR AGRICULTURE

Water is one of the world’s most basic and increasingly contested resources. It is critical to agriculture, health and sanitation, manufacturing, power generation and daily household needs (Adam 2009 et al. and Tatlock 2006).

According to Tatlock (2006) Sub-Saharan Africa suffers from chronically overburdened water systems under increasing stress from fast-growing urban areas. Weak governments, corruption, mismanagement of resources, poor long-term investment, and a lack of environmental research and urban infrastructure only exacerbate the problem. In some cases, the disruption or contamination of water supplies in urban infrastructures and rural area has incited domestic and cross-border violence. Experts say incorporating water improvements into economic development especially for the rural poor communities is necessary to end the severe problems caused by water stress and to improve public health and advance the economic stability of the rural poor areas.

In addition, Nsemukila (2003) argues that, though water is an essential commodity for daily survival of households, the commodity has proven to be scarce in some parts of Zambia. As a result, households spend more time fetching it.

6.5 SHELTER

Shelter is one of the fundamental human rights. Every person deserves to be housed in decent and safe accommodation. The Zambia National Housing Policy produced by the ministry of local government and housing (1996) stipulates that priority should be given to housing development in rural areas. In the policy, it has been recorded that 15% of the total national budget each year needs to be allocated to improving housing in the rural areas. Sadly, this has remained a policy on paper, as housing in most of the rural areas in Zambia still consist of grass thatched houses (Zambia Policy on Housing 1996).

The poor rural community challenges outlined above require concerted efforts if they were to be addressed. It is therefore imperative for the Council of churches in Zambia to play its prophetic role in addressing some of the challenges faced by the rural poor communities especially where the church has representation.

August (2010) argues that the preeminent activity of the church is in the public arena and not in the sanctuary. He acknowledges that the impact of the sanctuary on those who enter it is great and should not be underrated, especially amongst the poor who enter it to find hope, determination and trust in God. But the church should also be seen doing more outside the sanctuary as people are encountering many social challenges which affect their spiritual life negatively for example the church should advocate for better housing in rural areas.

McClure (1995) furthers the argument advanced by August (2010) by indicating that preaching has to be prophetic, evangelical and also pastoral. In other words, preaching should empower the congregants to be able to express communal power even beyond ecclesiastical boundaries.

But on the other hand, the sanctuary may serve only as a comfortable substitute for the harsh realities outside its walls (Jacobsen 2001). This argument points to the fact that the church of the 21st century should be made to realize that its mandate is to go out into the world, live the life of Jesus, making disciples of all nations through testimonies about Jesus and also through holistic ministry. This actually is the core business of the church which should preoccupy her all the time.

According to the Bible, (1984: Matthew 5: 13), the church commissioned by Jesus Christ is called to be the salt and light of the world. This actually means that the church should be seen actively participating in addressing the challenges which people are facing in the world today, such as food insecurity, poor water, sanitation and shelter.

As discussed in Chapter one of this study, Booty (1982: 13) gives one of the true marks of the church as that of a servant. According to Booty the church is the community in the world that serves God and His creation, including all humanity. If the church does not fulfill this task, it ceases to be that which it was created for. Booty is mindful of the mission task of the church as he says that Jesus' ministry is holistic (1982: 18). Booty reflects on Matthew 25 which teaches that 'the ministry of service hinges on food provision, drink, clothing and shelter'. His dictums are realistic in the sense that he emphasizes the servant hood of the church. The church as servant should shoulder the challenge of offering its services to those in need of physical food. In this case, the church should have a clear vision and an engaging mission statement. In view of the above, it is only prudent that the Council of Churches in Zambia through its member church (RCZ) demonstrate servant hood as it carries out its missionary mandate in the world today. The following section discusses the Reformed Church in Zambia (a member church of CCZ) in context of its diaconal work.

6.6 EVALUATION OF THE RCZDD FOOD SECURITY PROJECT

The main objective of the RCZDD food security evaluation was not only to depict what impact the project has had on the households for the past five years but together with the farmer beneficiaries, the community committee, Agriculture Volunteer Workers (AVW's) and Diaconia staff conduct an assessment by looking at what could be the Strengths, Weaknesses, Opportunities and Threats in the running of the food security project by the church.

According to Cusworth (1993: 10) an evaluation consist of investigating and reviewing the effects of the completed project, to see whether the benefits which were planned to flow from it have indeed been realized and whether these benefits have had their intended consequences.

Therefore, in taking time together with the stakeholders in the project to look back over the past years 2006-2011, the community was expected to celebrate the accomplishments and also help this farmer group to learn from the past mistakes and formulate new strategies to increase impact. All the stake holders participated in the evaluation of the food security survey. The participatory methodology enabled every participant in this review to have a chance to say something on how the project impacted their lives or not. This approach also created an opportunity for success stories from the farmer beneficiaries who had done very well in all the farming seasons to be heard.

The main goal for the review was to assess whether farmer beneficiaries were confident enough to plan for their own development. Myers (2003) notes that true transformation development takes place only if the poor people understand what it means to be created in the image of God and understand the fact that they have gifts that can be used to further a fruitful vocation. The food security review was undertaken as an affirming and growing process for all the stakeholders. The review used the qualitative data collection methodology in order to collect required data in this food security review. This review was undertaken to assess the impact of the project on household food security.

In order to attract full participation of every farmer beneficiary in this food security review the following criteria were adopted:

- (a) The researcher conducted an orientation on the specific objectives/targets set at the outset of the project. The food security review group went through the log frame of the food security proposal. The purpose of going through the log frame was to remind the group of the set objectives of the food security project. This was a good reference point in the focus group discussions.
- (b) The focus groups were tasked to document the achievements of the project against the set targets in the logical framework.

6.6.1 Semi-Structured Focus Group Discussions and Individual Interviews

The methodology used by the researcher to collect data in this food security review was individual interviews and focus group discussions. The topics for discussion in the focus group discussion included changes in income, agriculture production, marketing

of crop surplus and access to mutual resources. These topics were summarised as lists of events, activities or income sources that had been identified. These were aspects of people's lives that had improved over the past five years.

The RCZDD food security project implemented in Maposa community is targeting 300 women, mostly widows, 200 youths mostly orphaned and 100 men, mostly retrenches from the former state enterprise Zambia Consolidated Copper Mines, a conglomerate that was sold to private hands. A total of 100 households are direct beneficiaries of this project which started in the year 2006.

6.6.2 Data Collection

This study was basically a qualitative and exploratory one in which a combination of data collection methods were applied to generate simple statistics to support and validate the findings. However, it must be noted that a variety of methods were employed to help give out a complete picture of the situation. According to Denzine and Yvonna (1994: 12) it is argued that no single method can give the subtle variations in ongoing human experience. This is also expected to increase the validity of the results. This study therefore involved a survey technique as data collection tool.

According to Chambers (1997) survey techniques comprise the following components:

- (a) Conducting interviews, direct contact between interviewer and interviewee.
- (b) Questionnaire with open ended questions.
- (c) Field research through Participatory Rural Appraisal and Participatory Rural Research. The PRA can include focus group discussions, workshops, case studies or rapid report writing.

In addition, Kotze (1983: 98) points out that the PRA process should be truly participatory and it is part and parcel of community empowerment. In other words, the people themselves should be in the picture as to what is happening and they should also be able to alter the course of events where necessary.

The researcher used all three methods in gathering data. Maposa community is a vast area covering a population of over 5 000 as indicated in the demographic survey. It is practically not possible for one to bring on board all 100 household beneficiaries (700 people) in the project. This community is divided into zones A and B. The criteria for selecting members to participate in the survey attributed to purposive sampling. The snow ball technique was also used to identify the approximate number of people who have benefited from the project.

- (i) **Conducting interviews:** Primary data was collected through the use of a structured questionnaire with open ended questions. Farmers and community committee members were interviewed on a one to one basis. (See appendix questionnaire). The focus groups were formed to answer the questions related to the group. Table 3 below shows the composition of the focus group and appendices 5 and 6 the composition of the individual questionnaire and focus group questionnaire.
- (ii) **Conducting the focus group discussion:** The Agriculture Volunteer Workers and Community committee assisted in inviting people to attend the focus group discussions. Tables 3-7 below show the focus group members, respondents' age, respondents' education and members of a household. Characteristics of the respondents are tabulated to enable comparison as shown in the table below:

Table 4: Focus Group Members

Group1: Farmers	Group 2: Community Committee	Group 3: AVWs and Development Facilitator
Women 10	Women 4	Women 1
Men 8	Men 6	Men 2
Youth 2	Youth 0	Youth 0
Total 20	Total 10	Total 3

The focus group discussions were personally facilitated by the researcher. The researcher appointed secretaries to record the proceedings of the focus group discussions. The researcher used the questionnaire methodology in order to attract member participation. The questions were straight forward and easy to answer. Participants were asked to respond to the questions in their own language and the groups preferred two languages, Bemba and Nyanja, as familiar languages spoken on the Copperbelt of Zambia.

Table 5: Respondents' Age

AGE	PERCENTAGE
0 - 10 years	12%
10 – 35 years	34 %
35 – 50 years	33%
Above 50 years	21%

Table 6: Respondents' Education

Level of education	Male	Female
Grade 1 – 7	45	15
Grade 8 – 10	15	10
Grade 11 – 12	5	0
Tertiary education	5	0
No school attendance	3	7

Table 7: Number of Members in Household

Household	Number
Children	7
Adult Female	1
Adult Male	1
Total members per household	9

Tables 7 and 8 show respondent's household food security and the changes the project has brought about for small holder household farmers.

Table 8: Food Security at Household Level

Number of meals per day	Number of Households	Food secure %
Have three meals a day	70	70%
Have two meals a day	20	25%
Have one meal a day	10	5%
Have food for six months	30	30%
Have food all year round	70	70%

Table 9: Livelihood Improvement through Farming

Received benefit from farming	Average	Percentage
Additional household food self-sufficiency	70 small scale farmers	70%
Additional money through crop sale to supporting school going children	65 small scale farmers	65%
Additional household goods (Pots, furniture, radios and bicycle)	92 small scale farmers	92%
Infrastructure improvement – iron sheets, brick house	26 small scale farmers	26%
Feeling happy to be independent, is food secure	70 small scale farmers	70%
Feeling sad, no improvement and not food secure.	10 small scale farmers	10%

The draft report was presented to the group for clarifications, correction and approval. This was done according to the set objectives of the research.

6.6.3. Data Analysis

Kumar (2011) argues that ‘there is no point in doing a sophisticated statistical analysis if the readers are not familiar with the sophisticated procedures’. He further states that in qualitative research, the main emphasis is to decide how one is going to analyze

information obtained in response to each question asked to the respondents. In qualitative research the focus is on what should be the basis of the analysis of the information obtained; that is, its contents, discourse, and narrative or event analysis.

According to Creswell (1994:153) qualitative data analysis involves classification of field notes, grouping relevant information and similar issues together according to questions.

In view of the above explanation, during the data analysis, large interview statements were condensed to make the briefs more succinct and meaningful, without distorting the respondents' ideas. Calculations of the descriptive statistics to provide simple summaries and frequency distributions were undertaken. The responses from respondents for each information collection tool was compiled and summarised. The information from the focus group discussions and general understanding of the interactional relationships within the home, community and society was taken care of.

It is important to note that the main objective of the qualitative survey conducted in Maposa community was to obtain information to enable the researcher to assess the contribution which the Church in Zambia as an agent and catalyst of Transformational Community Development has made towards addressing the food insecurity problem among the rural poor communities in Zambia.

This process enabled the researcher to observe the changes and trends that had taken place in the project in the study community over a period of five years. Special attention was paid to the following areas: changes in main income, agricultural production and the marketing problems, access to mutual resources and the ways in which the farmer households were perceived to have improved or not regarding the living standards for the past five years.

The outcomes of this survey have been tabulated in table form as a summarized report of the food security survey. (See Table 10 below).

Table 10: Summarised Report of the Household Food Security Review

Log Frame reference	Documented achievement	Indicator/ comment
To provide 100 household with farm inputs from 2007 to 2011.	100 x 10kg maize seed was supplied to the farmers for 5 years.	Number of households who benefited and grew certified seed for 5 years. (See Appendix 10 RCZDD annual narrative report to the Board 2009/2010).
At least 80% households have 3 meals a day.	In 2009/ 2010 farming season 70% of the households had three meals a day.	Number of farmer beneficiaries going for food for work (piece work).
At least 70% of beneficiaries have income to buy basic needs.	In 2009 - 2010 farming season, 92% of farmers had acquired capital items such as bicycle, radio, and iron sheets for roofing their houses.	Number of farmers who bought capital goods. Example - Mrs Agatha Makasa, a widow, is sighted as a success story. (See Appendix 10 for full story on a widow who is practicing sustainable agriculture to earn a living).
To conduct 20 workshops in conservation farming.	25 workshops were conducted for the period 2007 – 2011.	Number of farmers who attended the workshops conducted.
To enhance household food security and reduce levels of poverty.	70% of the farmers are able to have three meals a day unlike before. Most of the farmers in the review indicated that they are able to support their school going children.	Number of households who eat three meals a day
To build capacity at all levels to respond to modern sustainable methods of farming.	90% of the farmers have been capacity built in conservation farming methods replacing the traditional method of mono cropping.	Number of farmers who are practicing conservation farming method.
To reduce malnutrition at household levels especially for the children.	Malnutrition has reduced in the project area by 60% due to improved nutrition among most households.	Number of households attending the health centre for medical attention and also records from the clinic.

Log Frame reference	Documented achievement	Indicator/ comment
To increase household income levels from crop surplus sales.	65% of the farmers had surplus crops for sale and their income at household level has improved.	Number of farmers selling surplus crops to Food Reserve Agency (FRA).
To improve crop marketing skills amongst farmers.	The crop marketing skills among farmers improved by 70% resulting from the workshops conducted.	Number of farmers who attended marketing skill workshops conducted by RCZDD.
To reduce HIV/AIDS caused by high levels of poverty in the area.	Due to a sustainable agriculture practice, HIV/AIDS had drastically reduced by at least 40%.	Number of people who access ART facility from the clinic.
To improve crop storage methods at household and community level by constructing 2 modern storage shades in Maposa community.	One storage shade has been constructed in the study area.	Number of storage shades constructed in the study area. The constructed storage shade has improved the crop marketing as farmers can store their surplus crops till the crop prices are reasonable enough according to Food Reserve Agency (FRA). The farmers are no longer cheated by briefcase buyers.

Table 11 below shows a wealth ranking conducted with the farmer group during the workshop to determine the practice of sustainable agriculture and household food security in the study area.

Table 11: Wealth Ranking

Set Objective	Ranking (High, Medium or Low)	Recorded impact/ Challenge
1. To enhance household food security at the end of 5 years.	<i>High</i>	Household food security has been enhanced by 90% in the study area. 10% of the farmers still need to be assisted because they are still struggling to apply the new farming method.
2. To build capacity of farmers to respond to modern sustainable agriculture.	<i>High</i>	Farmer knowledge in conservation farming at present stands at 90%. The notable challenge for the programme staff is to pay frequent field visits to farmers in order to assist them to overcome some of the challenges they face in their fields.
3. To increase household income levels through surplus crop sales.	<i>Medium</i>	Farmer surplus crop stand at 65% and is likely to increase in the years to come.
4. To improve crop marketing skills among farmer beneficiaries.	<i>Medium</i>	The farmer marketing skills at the moment stands at 70%. More capacity building is required in this area to assist the remaining 30% of the beneficiaries.

6.7 SUMMARY OF PROJECT ACHIEVEMENT

6.7.1 Major Achievements of the Maposa food security project

It is noted that any meaningful analysis of the project's achievements must seek to determine whether or not the objectives identified at the outset were attained. This means that assessment of the achievements should be based on evaluation of the project using effectiveness as one of the key standard evaluation criteria. In this regard, it is evident from the conclusions drawn above that since the Maposa Food Security Project was effective in achieving its intended objective of improving livelihoods and household food security among its 100 target farm families. The specific achievements of the project in relation to its principal interventions follow below:

a) Establishment of governance structures by putting in place community structures as entry points in the target communities: This review found that the starting point for the project was to establish governance and project management structures. In this community, there were Community Committees who were responsible for managing the project's affairs such as seed distribution and the management oversight of the Community Facilitator who is based in Ndola. The Community Committee ensured that there is more transparency and accountability in the selection of beneficiaries and distribution of materials such as seeds; and this has removed the suspicion that the Community Facilitator might be favouring some farm families.

b) Capacity building of community structures: The Community Committees were given knowledge and skills in leadership and management. This has made them more enlightened in supervising and managing the affairs of farm households that have benefitted from project activities. In addition, members of the Community Committees and those of Savings Groups have received training in basic business management. This has assisted them to understand the group dynamics associated with the challenges of operating small-scale businesses at community level such as: the larger the group, the less cohesive it becomes and the more difficult it becomes to “do business together” and *vice-versa*.

c) Training of target farmers in sustainable agricultural practices, that is conservation framing: All the beneficiaries who were interviewed reported that they had received training in various aspects of conservation farming such as (i) minimum tillage, (ii) crop rotation, (c) inter-cropping, (d) residue retention, and (e) agro-forestry, etc. They also said that they had adopted some conservation farming practices which were “manageable” such as (i) crop rotation, (ii) inter-cropping, and (iii) residue retention.

d) Provision of small livestock, that is, goats, pigs and chickens to farm families and Savings groups, respectively: Farm households reported that they have received goats as grants from the project under the principle of “Pass-on-the Gift”. Those in Savings Groups had also been given chickens by the project on a grant basis, and all the Poultry project visited were found to be operating profitably.

e) Provisional of seasonal maize and beans seed loans: The project was found to have been giving seasonal seed loans for maize and beans using, what has within the context of this report been “dubbed” “Sustainability Seed Loans”. These are loans characterised by gradual and consequent reduction of the amount of support over the 6 years period when the project has been operational.

f) Training farmers in agro-forestry practices: Most of the farmers interviewed by the review team have been trained in agro-forestry practices. In addition, some of them were taken to Chisamba at Golden Valley Agricultural Research trust(GART) for an exposure visit on conservation farming which also included learning how to plant agro-forestry trees and agro-shrubs which fix nitrogen back into the soil, and thereby assists in improving soil fertility.

g) Mainstreaming of Gender, HIV and AIDS and Human Rights into the project's activities: The project has made an attempt to mainstream gender, HIV and AIDS and Human Rights in its interventions. With regard, gender, it was found that most of the positions of Chair-Persons for the Savings Groups were occupied by women. However, there were also some men (in most cases in the minority) who belonged to Savings Groups. HIV and AIDS and Human Rights were also part of the project's interventions. It was very evident in the Focus Group Discussions with farmer groups that members of the target communities had become aware of how HIV prevention and AIDS management through VCT and ART contributed towards improved household food security. They all appreciated the fact that improved health through preventing HIV infection and treatment of AIDS through ART improved the health and well being of household members and thereby made to become more productive and ensured that their families were food secure. Human rights sensitization conducted in Maposa community as being important to enable communities obtaining their title to land.

See Appendix 4 (Learning Points).

6.8 CONCLUSION

Chapter 6 presented guidelines for empowering households through food security: Lessons from Maposa community. These guidelines form the basis for implementation of an ecclesiology of food security by Reformed Church in Zambia (RCZ) and in general the Council of Churches in Zambia (CCZ). As discussed above, transformational development has been described in this study as that which involves transformation of all areas of human life such as: life sustenance, equity, justice, dignity, freedom, participation, reciprocity, ecological soundness and hope. The church as both an agent and catalyst of community transformation should participate in transformational development as mandated by God. As August (2010) argues, the basis

and motivation for the church's participation in community development is its relationship with and its calling by God.

The main conclusion of this in-depth evaluation of the Maposa Food Security Project is that it has met its objective that was set in 2007 by the Reformed Church in Zambia Diaconia Department (RCZDD). The project has substantially improved the livelihoods of the 100 household farmers in Maposa community. This is evident from both quantitative data and qualitative data which show that:

- (a) Household food security as measured by the number of meals taken per day as a proxy indicator has moved from an average of one meal per day to three in all the communities that were visited by the researcher.
- (b) More than fifty-(50%) of the 99 farmers interviewed reported that they had diversified their field crop production, and
- (c) More than fifty percent-(50%) were producing a surplus for sale.
- (d) The same percentage reported that even if the project seasonal seed loans were phased out, they would still be able to afford to buy their own seeds.

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CHAPTER 7

SUMMARY, CONCLUSION AND RECOMMENDATION

7.1 SUMMARY

This practical theological discussion has been developed out of an effort to answer the practical investigatory question: ‘How can the church and its context participate in a practical way in transforming communities to become food secure where there is poverty and food deficit?.’

The research question reflects the ecclesiological and diaconal aspects of the problem regarding:

1. The degree of the church’s involvement in transformational community development.
2. The church’s involvement in building the capacity of food insecure communities to actively participate in their own community development.
3. The church’s involvement in building communities’ capacity to advance or foster their own development.
4. The church’s involvement in empowering communities to mobilise their own resources in order to advance their own development process.
5. The church’s support for community initiated projects that work towards sustainability.

These have been the guidelines in the quest for finding ways to mobilise the poor rural small holder farmers to participate in sustainable agriculture and a food production system which could result in rural poor households’ attainment of household food security.

This academic journey investigating the church’s involvement in the promotion of sustainable agriculture for food security did not just start from without, but was based on the

researcher's assessment of his own local experience of working with rural poor small holder farmers in Zambia's Copperbelt Province and also an interest in community development studies. Though this research has been interplay between academics and practice, the emphasis of the researcher in this study has been the practical involvement of the Reformed Church in Zambia (RCZ) in promoting agriculture and food production among the rural poor communities in order to achieve transformational community development.

According to Sugden and Samuel (1987) transformation is a joint enterprise between God and humanity. It involves transformation of all areas of human life such as: life sustenance, equity, justice, dignity, freedom, participation, reciprocity, ecological soundness and hope. The church as both an agent and catalyst of community transformation should participate in Transformative Community Development. August (2010) argues that the basis and motivation for the church's role in development is its relationship with and calling by God. The church has a God given mandate to participate in the transformation of communities so that people can experience the fullness of life as described in the Gospel according to John 10:10.

Therefore, the summary of the entire work is presented in order to put forth the concluding community development model and guidelines for the promotion of sustainable agriculture and food production as recommendation to the Reformed Church in Zambia (RCZ) and Council of Churches in Zambia (CCZ) in general in their engagement in transformative community development. The study recommends the adoption of this praxis of community development by the Reformed Church in Zambia (RCZ) and CCZ in their endeavour to be a transformational church. The researcher in this study advocates the engagement of the church in the enhancement of household food security of the rural poor communities through sustainable agricultural practices.

Chapter 1 served as an introduction to the research study and examined its motivation for the choice of the research topic: A Creative Tension between Spirituality and Physical needs: A Theological Ecclesiological Evaluation of the Food Security programme for the Council of Churches in Zambia.

7.1.1 Chapter 2

In this chapter, the researcher argued that food insecurity is a proven global reality, especially in Third World countries. The FAO predicts that by 2015 there will be a shortfall of 25 million tons of cereal in Sub-Saharan Africa and the number of undernourished people could reach 205 million by 2050 (FAO 2008).

Chapter 2 argued that a Just and sustainable food production system is one which ensures adequate nutrition for all people in a given context. It has been pointed out that production and distribution of food are both critical to attaining distributive justice and overcoming hunger in a given nation. It was pointed out that the removal of food deficits among the poor communities requires deep changes in existing economic institutions and substantial modifications to the present asymmetrical social arrangements. Food security which entails access by all people at all times to enough food for an active, health life can be achieved through the practice of sustainable agriculture and improved crop storage (Van Zyl and Kirsten, 1992: 171).

Chapter 2 Reflection

- Sustainable agriculture and food production systems are required as it ensures adequate nutrition for all people in a nation like Zambia.
- A stable agriculture and food production system should not only provide adequate food for all people but also provide ways that uplift human dignity and enhance human fulfilment. This means that society should be structured in such a way that it enables all people to provide their own food and become self-reliant.
- Food systems should be evaluated in terms of whether it increases or diminishes opportunities for household self-reliance.
- A sustainable agriculture and food system is one which shares its bounties. Sharing and giving should form part of the life style of all community members, despite all efforts to gain self-sufficiency.
- Justice demands arrangements in which all have equal opportunity to earn their daily food.

- Justice demands equitable access to resources needed for the production of food. In the agricultural sector this means equitable access to land, water, seed, fertiliser, credit, markets and scientific knowledge.
- Equal concern for all persons demands unequal treatment in the situations of inequality.
- In the context of agriculture and food production, justice demands that small holder farmers be accorded preferential treatment so that household food security can be attained.
- A just food system be it locally, nationally or even internationally means access to an adequate variety of food as a basic human need.
- A just food system should encourage participation by all stakeholders in agricultural activities to maximise food production among the poor rural communities.
- A just food system means getting involved in the production of food. Food production strategies must be employed in order to eradicate hunger. These strategies include the following:
 - (a) Helping the small holder farmers to increase food production
 - (b) Government increasing support for research and promotion of agriculture extension officers to work with small household farmers.
 - (c) Creating a platform for farmer organisations where their concerns can be aired and solutions found.
 - (d) Documenting and sharing models of good practice.
 - (e) Encouraging small holder farmers to practice sustainable agriculture.

7.1.2 Chapter 3

This chapter argued that Zambia with land area of 752 620 square kilometres, the agriculture resources are underutilized with only 16% of the estimated 9 million hectares of arable land being cultivated. The demand for reasonably fertile land, relative to population pressure, is much favoured than most Zambia's neighbours. Agriculture provides for about 50% of the population and 67% of the formal labour, it remains by far the opportunity for income and

employment for women who comprise 65% of the rural population according to UNZA (2002:62). The performance of agriculture has to improve in order to fulfil its crucial role for development of the economy. Sector growth has failed to keep pace with that of the population for many years, its annual growth rate average only 2.5% between 1986 and 1995 according to UNZA (2002).

Chapter 3 Reflection

- Agriculture in Zambia provides for about 50% of the population and 67% of the formal labour, it remains by far the opportunity for income and employment for women who comprise 65% of the rural population (UNZA 2002:62).
- The performance of agriculture has to improve in order to fulfil its crucial role for development of the economy. Sector growth has failed to keep pace with that of the population for many years, its annual growth rate average only 2.5% between 1986 and 1995 according to UNZA report 2002.
- Zambia's agriculture is predominately rain fed and irrigation is applied on only 6% of the potential area. Recurrent droughts and more recently, unusually heavy rains, sometimes result in widespread crop failure.
- The major crops produced in Zambia are Maize, Sorghum, Cassava, Millet, Sun flower, Groundnuts, Soya bean, Cotton, Tobacco, Sugar and a variety of vegetables. The total planted area has declined by some 10% since 1990/91 and decline is mostly due to the reduction in Maize planting (UNZA 2002:62).
- The agricultural sector is critical in poverty reduction and economic development of Zambian economy and will be the engine of growth for the next decade and beyond. Agriculture generates between 18% and 20% of Growth Domestic Product (GDP) and provides the livelihood of more than 60% of the labour force.

7.1.3 Chapter 4

In this chapter the researcher investigated agriculture and food production from a biblical theological perspective. The researcher argued that both the Old and the New Testament of the Bible speak out on the subject of food security. It is further observed that the subject of food is covered from Genesis in the Old Testament to Revelations in the New Testament. From the Bible's point of view, food is important because it sustains human life (Prov. 12:11). In the Old Testament, the image of sufficient food speaks of God's providence, the

sustenance of creation and the proper ordering of life. The New Testament offers a complex understanding of the tension between spiritual food and physical food. The quest for spiritual food in the Bible is equated to the quest for physical food. In this chapter special attention has been given to physical food security as opposed to spiritual food.

Chapter 4 Reflections

- The word bread or food in (Hebrew-*lehem*) runs throughout the Old Testament. Food is one of the many biblical images that, when traced through the canon, yield a picture of salvation history and biblical doctrine in a microcosm.
- In the Old Testament farming was the main activity which pre-occupied the Israelites.
- The people of Israel practiced a farming system which enabled them to manage their land well as stewards. Unlike farmers in Egypt and Mesopotamia, Israelite farmers were not dependent on irrigation.
- Even though the rain season in Palestine was rather short and soil was often rocky, the farmers had knowledge about clearing and fertilizing the land and usually produced fine crops.
- Farming methods evolved during the period of Israelite settlement.
- Only later in history were the Israelites able to use the rich plains of the valley land for intensive farming.
- Sowing took place after the first rains had softened the ground. If the farmer tried to plough before the rain, it was difficult to plough (Deuteronomy 11: 13 – 17).
- The Israelite farmers learned how to grow crops best suited for the different kinds of land, fertile plains, rocky hills and semi-barren areas. As time went by, their knowledge as farmers grew and enabled them eventually to cultivate fruits such as melon, figs, dates, grapes and olives. The growing of crops influenced both their economy and social life.
- The Jubilee (*yobel* in Hebrew) came at the end of the cycle of the seven sabbatical years.
- The New Testament is also not silent on the subject of agriculture and food production.
- The word food is found throughout the entire New Testament. In the New Testament the word food (*Greek-artos*) refers to the sustainment of human life and it forms part

of human solidarity. It is also symbolically used in the person of Jesus Christ as the food sent from heaven.

- According to the Pauline writings (1 Thessalonians 4: 11-12) farming should be understood to be a blessing from God and not a curse. It pleases God when His people use their own hands for the production of food to sustain their livelihood.
- It is God's will for believers to participate in farming in order to have enough food to feed on all year round.
- It is theologically unacceptable for people to be food insecure when God has provided land where food could be produced to sustain all people.
- There are many references in the New Testament to the relevance of food and its relation to other aspects of life:
 - (i) Food and grace.
 - (ii) Food and hope.
 - (iii) Food and work.
 - (iv) Food and faith.

7.1.4 Chapter 5

Chapter 5 argued that the church (RCZ) and other Christian institutions must promote sustainable community development with an integral theological view of humanity as they participate in transformational development. According to Samuel and Sugden (1987:81) transformation development involves physical and spiritual transformation.

This chapter further argued that God is interested in a development that transforms the whole creation for a better living environment. Transformation development does not only apply to the transformation of individual minds and behaviour, but also to the transformation of families, society and the world. In other words transformational development entails holistic transformation of a human being. The Church has a big role to play in transforming communities holistically. The church is a worthy and valued catalyst of community development within the social development paradigm.

Reflection Chapter 5

- **The theology of food:** The Bible reveals that the desire of God according to Genesis 2 v. 15 is that his creation should have work the earth and be able to produce food.
- **Life sustenance:** Any plan for transforming human existence must provide adequate life sustaining goods and services to the society. When a society has only minimal of what is required to be a full human being, life becomes a distortion of God's expectation for well-being of humanity.
- **Equity:** An equitable distribution of material goods and opportunities among the peoples of the world is very important. The Christian favours a kind of development that is within the reach of the majority. Equity is essential to transformation because all humans are God's children, with the same needs and potentials.
- **Justice:** Justice goes beyond mere redistribution.. A just vision of the transformed world is where every human, no matter his/her race, religion or nationality, can live a fully human life. Justice in the end should result into emphasizing of meeting the needs of the poorest of the poor and a fairer redistribution of resources satisfying the basic needs, in a harmonized co-operative world in which everyone seeks to live at the expense of no one else.
- **Dignity and self-worth:** True transformation also depends on the establishment and the affirmation of all people's dignity and self-worth. People need self-esteem to be fully human. This calls for the re-evaluation for the true needs of the people, encouraging self-reliance, participation, and instilling trust in people and nations based on their autonomy; thus, affirming the worth and dignity of all. The Church as it works in transforming communities through the promotion of sustainable agriculture to enhance household food security should work towards affirming people's dignity and self worth. In all development programs, people should come first and not the project (Burkey 1996).
- **Freedom:** Freedom is a vital component of transformation. Christian transformation must work to liberate people from these bondages and also from bondage to themselves. In John 8: 36 Christ tells his followers that, "*If then the Son sets you free, you will be free indeed*" – that is, free to achieve all dimensions of the human potential God has endowed this world with (Samuel and Sugden, 1987:43). Therefore,

freedom should aim at liberating people from unjust local and global powers by stressing local control and participation in the structures and decisions towards a transformed society.

- **Participation:** Participation plays a very meaningful role in development. If people participate in the process of their own transformation, it becomes meaningful, effective and lasting. In this regard, God has always given high value to human participation in his plan for the world. He has allowed human beings to participate in the shaping of history, both personally and collectively. Christians are called fellow workers with God and stewards of God's resources. True human transformation, therefore, comes about only when people are able to act on their own needs as they perceive them and progress towards a state of wholeness in harmony with their own context.
- **Cultural Fit:** Transformation must be appropriate to the culture that is to be transformed. All cultures are a part of God's creation and Jesus honoured culture by entering fully into Jewish social and religious life with all its traditions. No culture is pure and holy, but all have intrinsic values that can be redeemed and used as a basis for social transformation.
- **Spiritual transformation:** The core of human and social transformation is spiritual. Spiritual transformation must begin with an individual but must spread to encompass the transformation of all of society. When men turn to God and are transformed by the Spirit, their individual lives as well as the structures in which they live are affected. As social, economic, and psychological relationships are redeemed, structures and institutions are transformed. Redeemed structures, in turn, allow people to be more human (Samuel and Sugden, 1987:47).
- **Reciprocity:** Progress and social change can result from both independent discovery within a culture as well as from intercultural contact and the transfer of innovation.. If farmers can learn to inter depend on each other, they will surely learn from each other's failure and success in farming. This aspect is cardinal in the implementation of a food security project.
- **Ecological soundness:** Transformation should also be environmentally sensitive. Our world is a closed biosphere that is delicately balanced for the existence of life, including human life. Therefore, we should care for the world around us.

- **Evidence from the Bible supporting the notion of Food:** The Bible provides overwhelming evidence on the notion of food production from which the world can be guided today in order to enhance food security.

7.1.5 Chapter 6

In chapter 6 the researcher presented guidelines for empowering households through food security. These guidelines form the basis for implementing an ecclesiology of food security by Reformed Church in Zambia (RCZ) and the Council of Churches in Zambia at large. In this regard, the researcher discussed the church's involvement in sustainable agriculture and food production to enhance household food security among small holder farmers in Maposa community.

Chapter 6 Reflections

- The Copperbelt Province of Zambia is 31 328 sq km.
- This province's name is derived from its copper mining activities.
- It was named Copperbelt Province after Zambia gained independence from Britain in 1964.
- Copper mining is the main economic activity of this province.
- The Copperbelt Province lies within Miombo woodlands eco-region.
- Under global ranking, it is proven scientifically to be one of the earth's most biologically outstanding terrestrial, freshwater and marine habitats in Africa.
- This province is the centre of an important mining industry and constitutes Zambia's economic heartland.
- Nowhere in Zambia was the impact of the global financial crisis felt harder than in the copper and cobalt rich province of Zambia.
- The privatization of the mining sector has led to an increase in retrenchments resulting in many miners losing jobs and income.
- The province has generally very high figures of unemployed people.
- Environmental concerns have taken a back seat to the business of short-term survival.
- The local population is typically ill-equipped and unprepared to deal with the consequences of the closure of the mines and to engage in other livelihood activities.

- The retrenched miners now venture into informal economic activities such as subsistence agriculture and extensive charcoal burning which involves environmentally unfriendly practices.
- Socially destructive activities such as scavenging and vandalism have become more prevalent in the province, threatening the sustainability of any environmental remediation measures to be implemented.
- 90 % of the rural poor people on the Copperbelt practice subsistence farming.
- Food insecurity on the Copperbelt is worse among the rural poor small householder farmers who depend on subsistence agriculture for their own food production.
- The other most vulnerable groups to food insecurity are the aged, female-headed households, orphans and the youth.
- Factors which contribute to household vulnerability and food insecurity in rural areas include: household income levels, age of household head, education level of household head, gender of household head, size and structure of household, labor constraints due to poor health and effects of HIV/AIDS, food production levels, food prices, household food taste and also distance to food markets.
- Maposa community is a settlement area for retrenched employees from the mines and other companies within the Copperbelt Province of Zambia.
- The small holder farmers in Maposa community practice conventional agriculture, also known as traditional or subsistence agriculture.
- In addition to the practicing of conventional agriculture, these small holder farmers also plant recycled seed which in turn gives them very poor yields, making them food insecure and perpetually hunger stricken.
- The lack of cash incomes, appropriate technological packages and the irregular supply of inputs are the major constraint affecting activities of small holder farmers in Maposa community. As a result of subsistence agriculture practice, small holder farmers in Maposa community always find it a challenge to raise enough money to meet other social needs like paying for the education of their children and other basic household needs.
- A problem of land tenure insecurity for those who have land and lack access to land exists on the Copperbelt Province.

7.2 RECOMMENDATIONS

For the Reformed Church in Zambia (RCZ) and generally the Council of Churches in Zambia (CCZ) to be effective in their quest for transformational development, especially among the hunger-stricken and food insecure communities on the Copperbelt, the researcher proposes the following recommendations:

7.2.1 CHANGE OF PROJECT MANAGEMENT SYSTEM

- Project Management Systems and Implementation should be strengthened by employing an M&E Officer under which the current Community Development Facilitator should work. The Monitoring and Evaluation officer together with RCZ management team should develop and articulate the following M&E instruments:
 - (i) *Monitoring and Evaluation (M&E) Framework for the food security project.*
 - (ii) *Templates for collecting data and information on indicators that will be used to track the performance of the project.*
 - (iii) *Baseline Study data collection tool in the food security project.*
- The Ndola Rural Food Security project is still relevant to the livelihoods and food security needs of the target community as such, RCZ is advised to double the number of farmer beneficiaries so that many farmers benefit from the project.
- The community committee of the food security project should champion the selection process of the farmer beneficiaries and not RCZ.
- RCZ should not pre decide the number of beneficiaries to benefit from the project, instead farmers should decide themselves depending on the resources available.
- RCZ should strengthen the formation of farmer groups so that they are able to tap into each other's experience and also access government farmer support.
- RCZ is advised to engage more government agriculture extension officers for technical advice on the type of seed for the type of soils in the area.

7.2.2 CHANGE OF VALUE SYSTEMS

- Promotion of sustainable agricultural technologies such as conservation farming should consist of a package of knowledge and skills training and farm inputs such as appropriate special hoes for minimum tillage. In addition, the package should also consist of extending credit for the purchase of agro shrubs.
- The number of small livestock given to farmer for pass-on-gift should be adequate to ensure timely reproduction and passing on the gift to other families in the communities.
- Grain storage facilities should be appropriately designed to ensure maximum safety of farm produce.
- Savings Schemes require additional business management training on issues of governance, gender mainstreaming, and group dynamics.
- The Child Centred Community Development Theory (CCCD) should be applied in the food security intervention in order to allow Children participation in the project.
- RCZ should promote off season farming by linking farmers to irrigation equipment suppliers.
- RCZ should promote crop diversification in their food security project because food security is not just about maize production but variety nutritious food all year round.
- RCZ should promote soil conservation among small holder farmers by planting Vetiver grass and Bananas in order to prevent soil erosion.
- RCZ should link up farmer groups to micro finance institution to enable them access small loans to boost their food production.

7.2.3 CHANGE OF ATTITUDES

- The project should continue with HIV and AIDS and Human Rights sensitization to ensure that farmers' health is safe guarded so that they are productive and food secure, and also to enable them lobby civic leaders such as their Members of parliament to have title to their land for the Maposa.

7.2.4 CHANGE OF CONGREGATIONAL ECCLESIOLOGIES

- RCZ should advocate for land tenure insecurity for the small holder farmers living in this part of Zambia.
- CCZ should appropriate a food security frame work in its structures and this should be adopted by all member churches of CCZ.
- The clergy should take a deliberate stance by creating awareness during Sunday service the importance of participation in small scale food production to enhance household food security.
- RCZ and CCZ at large should revisit the curriculum for training the Ministers by incorporating agriculture and food production as a module. Once pastors are equipped then they will be able to equip the saints in the congregations.
- CCZ should enhance awareness among its members on their role as salt and light of the world to be involved in addressing the food insecurity in Zambia through the promotion of sustainable agriculture.
- CCZ member churches should participate in food and agriculture forums for networking purposes.
- In order to improve on the data base for CCZ, it is advisable that CCZ develops a data tracking template which member churches should feel in twice a year for reporting purposes. Such information should be given to the government at some point to build into the national food security report.

7.3 CONCLUSION

This research has been undertaken in full view of the food insecurity situation among the small scale farmers living in the rural part of Zambia Maposa community to be specific. Given the level of poverty in Zambia where incomes are far below the poverty datum line, the food insecurity affecting most rural households is a serious problem requiring urgent attention. With a great endowment of natural resources, agriculture is one of the leading critical sectors with greatest possibility for generating economic growth and increasing food security. Therefore, small scale farming which represents a large potential resource for

increased agricultural production and poverty reduction should be promoted. However, realization of this potential will require an enabling policy environment to allow participation of organizations working for human emancipation (development) such as the Reformed Church in Zambia (RCZ) and the Council of Churches at large to participate more effectively and efficiently in their community development work.

This thesis therefore, attempts to contribute to the search for options that would ensure sustainable agriculture and food production amongst the poor rural small holder farmers in Maposa community of Zambia from an ecclesiological perspective. This attempt involves transformational development. According to Sugden and Samuel (1987:25) transformational development is a joint enterprise between God and humanity which include all areas of a human being such as, life sustenance, equity, justice, dignity, freedom, participation, reciprocity, ecological soundness and hope. This should be the goal of the church as an agent and catalyst of community development. The basis for the church's role in development is its relationship with and its calling by God (August 2010: 48).

The church's goal as both an agent and catalyst of community transformation should be to actively participate in transformative community development. The basis and motivation for the church's participation in community development is its relationship with and calling by God (August 2010:9).

It is my hope that the implementation of the suggestions contained in this dissertation by the Reformed Church in Zambia (RCZ) and the Council of Churches in Zambia (CCZ) in general, will help the church to move away from being only a pulpit body of Christ into being a more proactive church in addressing threats of hunger and food insecurity in Zambia through the promotion of sustainable agriculture among the rural poor small holder farmers living in the rural communities like the study case.

Furthermore, the food security evaluation conducted by the researcher should assist the Reformed Church in Zambia (RCZ) to apply itself theologically as it is implementing the community development projects in order to uplift people's livelihood in a more sustainable way. A church project should be seen promoting community participation and community

empowerment in order to make them sustainable. Project will become sustainable if communities acquire skills to champion the implementation of the project even without outside support.

The food security review carried out in Maposa community provides some important information on livelihood and rural empowerment techniques. Maposa is an area in rural Zambia that depends predominantly on income generating activities as the mainstay of livelihoods. The community is made up of former miners and was found to be surviving through subsistence agriculture. In the focus group discussion agriculture was rated highly as a means through which households were surviving. Poverty in this community is associated with an inability of individual households to practice sustainable agriculture as a livelihood strategy.

Food insecure households in the study community are distinguished from those who are able to produce enough food more explicitly by their food security status than by their other activities. In particular, poor farming practice, land ownership, lack of education infrastructure, water availability and shelter marked the challenges which hinder the rural poor communities to live better lives. With this being the case, as pointed out above, it is imperative that the church in this era should not only focus on pulpit ministry leading people to heaven through preaching. Pulpit ministry is not wrong in itself, but the church should also show solidarity with the poor, just as Jesus demonstrated. Ministry is not only about meeting spiritual needs only, but also about attending to the physical needs of the people like food.

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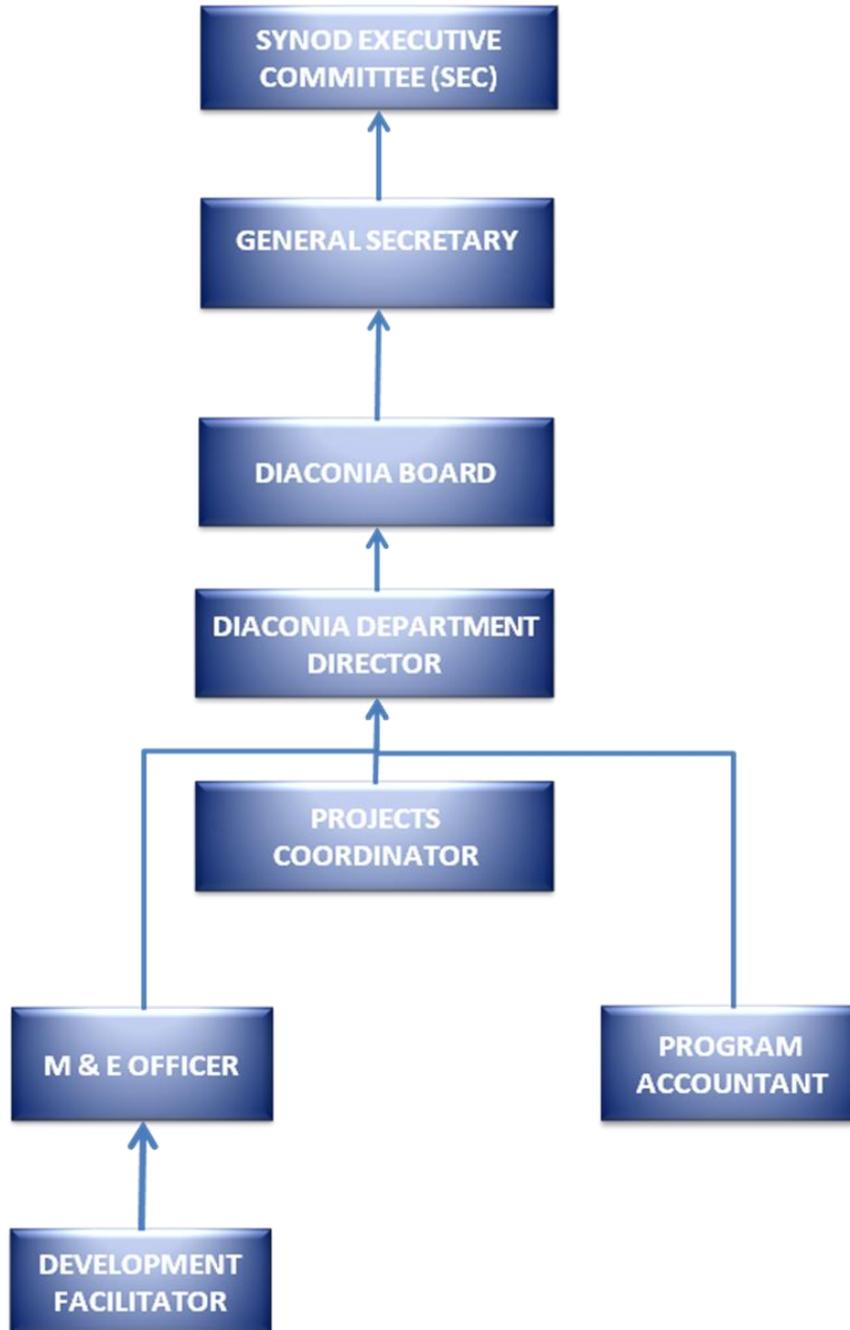
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APPENDICES

SECTION A: REFORMED CHURCH IN ZAMBIA (RCZ)

APPENDIX 1: RCZ COMMUNITY DEVELOPMENT STRUCTURE



Source: (RCZDD Strategic plan 2010 – 2014).

APPENDIX 2: RCZ NEEDS ASSESSMENT TOOL

(Needs Assessment tool used at the start of the Food Security Project in 2006).

In the initial set up of the Diaconia Food Security Project in Ndola Rural, the need assessment was conducted in the five catchments areas thus, Mundawanga, Kavu, Maposa, Munkulungwe and Mackenzie. Participatory methodologies using a questionnaire are employed to assess and analyze the root causes of food insecurity and high levels of poverty among the participants in the catchments area. Following are the questions:

1. What is your staple food?

.....
.....

2. How many meals do you eat per day?

.....

3. How many people live under your household?

.....

4. How many members of your family do you afford to take to school?

.....

5. What type of Seed materials do you plant?

.....
.....

6. How many months do you have food after the harvest?

.....
.....

7. How does your current crop perform?

- If low, medium, high what factors contributed.

.....
.....
.....

8. What type of agriculture methods do you use?

.....
.....

9. When do you do your planting and weeding?

.....
.....
.....

10. Where do you sale your farm produce?

.....
.....
.....

11. What marketing problems do you face when selling your farm products?

.....
.....
.....

12. How do you store your farm products after the harvest?

.....
.....
.....

13. Do you have organized community committees?

.....
.....
.....

14. Have the community committees been trained?

.....
.....
.....

15. Do the community committees address civic awareness issues?

.....

16. Do you have civic education groups in the community?

.....
.....
.....

OUTCOME/RESULTS OF THE NEEDS ASSESSMENT

The following are the outcomes (Results) of the needs assessment conducted by RCZDD at the start of the food Security project in 2006:

1. 100% of the people interviewed live on ‘*Nshima*’ mainly taken from the maize crop supplemented by sweet potatoes and pumpkins which are very much seasonal.
2. 75% of the people interviewed could only afford one meal a day and in situations where things get worse people survived on ‘*masuku*’ wild fruits.
3. The number of people per household interviewed could range between six to ten people.
4. 35 % of the children go to school and as their parents can afford to pay school fees, 65% are not were not going to school.
5. 95% of the people in the area planted recycled seeds in their fields which gave them very poor yields escalating hunger and poverty in the communities.
6. 30% of households have food lasting for 3 to 4 months after harvest depending on the number of people per household. For the other months people depended on piece works for survival.
7. The crop performance was (low) and the reasons advanced by farmer households were that people planted recycled seeds year after year. Soils were generally poor ‘infertile’ to support plant growth and the farmers themselves lacked skills and techniques on better farming methods.
8. The assessment also revealed that mono cropping which means planting of the same crop at the same piece of land year after year was the cropping system practiced by many small holder famers which resulted into soil dilapidation becoming infertile for crop production.
 - 40% of farmers practiced conventional tillage ‘*galauza*’ and not Conservation farming method.

9. 70% of the farmers planted their crops late, weeded their fields late and didn't know how to space their crops in the field .This gave negative results in terms of yields.
10. All the Farmers grew only maize. If maize failed, people experience hunger. In other ways farmers did not diversify their farming system.
11. Marketing of crop also proved to be a problem to all the farmer households. Reasons being that farmers lacked the skill in agriculture marketing as a result most of them failed to meet household basic needs, even taking the young ones to school due to low income or no income at all.
12. All the farmer household did not have adequate information on how best to store their crops as a result crops were devastated by pests and rodents resulting into reduced quantities and quality of the stored grain.
13. Some of the farmers households had low lands '*Dambos*' which were not adequately utilized for off season production 'gardening' instead they only depended on field crops which are only confined to a season. The trend somehow contributed to household food insecurity. Preservation of vegetables for market and other future uses was not a common practice.
14. The assessment also revealed that the communities had the committees, mostly church oriented but not very much organized. The committees lacked leadership skills, lacked cohesiveness. No training in leadership was given to these leaders.
16. The communities lacked knowledge on civic awareness issues which was a major contributing factor to developmental backwardness in the communities.
17. There were no community civic groups in the area to advocate on behalf of other members of the community.

Source: (RCZDD Synod office – Lusaka).

APPENDIX 3: SWOT ANALYSIS

STRENGTH	WEAKNESS	OPPORTUNITY	THREATS
Land availability in the study area	Lack of bicycles for mobility of AVW's	Good marketing for the crop products	Unstable prices of farm inputs
There are very strong farmer support in the area by the Diaconia department	Project support time is too short considering the number of household beneficiaries in the area.	Presence of GRZ extension agriculture officers.	They have settled on land without title deeds
Availability of certified seed	Lack of Agriculture Volunteers incentive.	Big number that needed agriculture support in the area.	Unpredictable weather pattern in Zambia
Availability of project support staff	Distance to the project affects monitoring.	Willingness of the farmers to learn new things.	Dependence syndrome
Good networking environment	Lack of GRZ officers	Agriculture shows conducted in the area	No political will for farmer support

APPENDIX 4: LEARNING POINTS

(The following is a list of learning points as compiled by the farmer group during the focus group and individual interviews conducted by the researcher in Maposa community.)

1. What went well in the project for the past five years?
 - Seed delivered and supplied on time
 - There was team work within community committees, beneficiaries and the project
 - Monitoring was done regularly by AVWs (Agriculture volunteer worker's)
 - Provision of certified Seed boosted household food security in the area.
 - Trainings conducted led to increased knowledge in modern sustainable methods of agriculture.
 - Networking with line ministries has exposed farmers to a lot of information which was lacking in the catchment areas.
2. What went right but could have been done better?
 - Certified seed was given and appreciated but the quantity was too small.
 - Beneficiaries who received seed were helped, but they were other vulnerable farmers who could not be helped due to the restricted number of beneficiaries picked.
 - Monitoring by AVWs and management staff went on very well, except for transport problem (management failed to visit the sites due to constant breaking down of motor vehicle and also lack of bicycles for easy mobility as well as rain season working kits for the (AVW's)
 - Board members monitoring project sites were alright, but the number of visits should be increased in future.
3. What did not work at all?
 - Out of the seed given maize, beans and groundnuts in year 2, groundnuts performance was generally poor.
 - Global crunch affected plans to complete construction of storage shade on schedule.
 - Farmer educational exchange visits didn't take place at all.

4. Measures proposed to address the challenges.
 - Close monitoring of farmers to ensure that sustainable methods of agriculture are practiced by all.
 - Provision of domestic animals to provide manure to small scale farmers
 - Increased field days
 - More demo fields in all project sites.
5. Lessons learnt for the past 5 years.
 - The volunteering concept was a good approach to community empowerment.
 - Sustainable methods of agriculture improve food security.
 - Working in groups (local food security committees) can bring a pool of ideas thereby enhancing development within communities.
 - Seed loan banks helps in preparing farmers for sustainability.
 - Most significant changes that have occurred as a result of this project.
 - Agriculture can empower farmers economically to support families

APPENDIX 5: RCZDD ANNUAL REPORT (2010)

(The following is the Annual Narrative report 2010 as compiled by RCZDD presented to the Board of governors of RCZDD).

Food Security on the Western region of Zambia (Tear Australia Funded project).

1. This report highlights activities for food security project in Ndola rural and integrated projects in Mbala and Nakonde implemented during the period January to December 2010.
2. **Overall objective of the food security:** 500 household will produce enough food for 12 months in the next three years. Enough food implies – **Starch** (Maize, Cassava, Sweet potatoes, rice etc) and **Relish/vegetable** (Beans, Groundnuts and Greens).
3. Table below shows achievements, lessons learnt and the impact of the intervention.

No	Output	Outcome	Lesson learnt	Impact
1	To procure and distribute 10 Bicycles to 10 Agriculture Volunteer Workers.	10 bicycles were procured and distributed to the AVWs during the period under review.	Bicycles are a great motivation to the AVW's.	The provision of bicycles for AVWs by the project has enabled the AVWs to be mobile.
2	To train 60 village committee members and AVW's in project management, finances and forward planning	The mobile training workshops were conducted in the 5 project areas	The participants present learnt key principles in project management, finance and planning to ensure sustainability and ownership of the project.	The project committees are using the acquired skills now and also in future even when the project phase out from these areas.
3	Capacity building of the village committees and the AVW's through training in Record Keeping, Decision Making and Cooperation.	The mobile training workshops were conducted in the 5 project areas.	The participants acquired knowledge in records keeping, crisis/problem solving procedures and decision making and how to enhance cohesion within the group.	Through this capacity building, AVWs and the community committees are now able to write and keep minutes, Stock control, do Farmer data base collection, keep

No	Output	Outcome	Lesson learnt	Impact
				Bank records.
4	Conducting routine inspections of all farmer fields.	25 farmers maize fields were inspected during the review period.	Rains in the Copperbelt were moderate. Crop stand was good from most of the Diaconia farmers' fields inspected in 2009 2010 farming season. Farmers had a good harvest and 90 per cent loan recoveries were recorded at the end of the season.	The trainings provided to farmers by the project in sustainable agriculture are yielding results. 90 per cent of Farmers plant, weed and fertilise on time Giving them an advantage for better yields.
5	Facilitating the opening of Bank accounts to 5 farmer groups	Four (4) farmer groups had accounts opened with NATSAVE during the reporting period and these are Kavu, Mundawanga, Mackenzie and Munkulungwe.	The opening of Bank Accounts has ensured safety of farmer group's money.	Project self-sustainability and community project ownership is slowly but sure being realised and 2012 is the goal.
6	Mainstreaming HIV/AIDS activities into food security project	Two awareness campaigns on HIV/AIDS were conducted in all the five sites. Farmers were made aware of preventive measures against contracting HIV/AIDS.	HIV/AIDS integration and information dissemination is an ongoing process until attitude change is noted among the beneficiaries' farmer groups.	At least 60 per cent of the farmers are knowledgeable about HIV/AIDS. The project is still working on the 40 per cent.
7	Provision of small livestock (Goats, Pigs and village chickens) to 5 farmer groups.	4 farmer groups received 44 animals in total	The animals are in custody of the village committee members. The procedure is that animals will be shared to all group members as they multiply. Eventually the members have to pay back an animal each to the project.	The provision of livestock to farmers will contribute to the improvement of household income and availability of animal manure in the long run.

No	Output	Outcome	Lesson learnt	Impact
8	To Lobby and facilitate 5 linkages of 10 farmer entrepreneurs to access funds from micro financial lending institutions.	5farmers were linked to CETZAM a micro financial lending institution based in Ndola during the review period.	The experience of farmers is that the service charge for loans at CETZAM is too high and that other conditions for accessing loans are not favorable. The project is still searching for fairer micro finance institutions.	
9	Facilitating 3 Farmer exposure visits through agriculture and commercial shows.	Only 2 farmer exposure visits were conducted during the review period. 10 Farmers attended the district agriculture show which was held in Ndola district and 7 farmers attended the provincial agriculture show which was held in Kitwe respectively).	The objective for farmers to attend the agriculture shows is to expose them to other new farming methods and also for farmers to share their experiences through exhibits and create contacts with relevant agriculture business institutions.	Linkages through these agriculture shows have been created. Farmers have now knowledge where to access small food processing and irrigation equipment.
10	To conduct 5 civic awareness campaigns among community leaders and sensitisation of 250 farmers on basic human rights	5 training sessions were conducted in the five project sites on civic awareness and basic human rights.	Farmers have been enlightened on basic human rights.	Community leaders are now able to lobby and advocate for good governance from duty bearers on behalf of their subjects thereby accelerating development in the area.
11	Conducting an orientation workshop for 10 AVWs on data capturing for the project baseline survey.	10 Agriculture volunteer workers were oriented on data capturing that is 2 AVWS from each project site.	The baseline survey is an important tool to be used to assess the impact of the project at the close of the second phase.	Data has been captured from all the sites, analysed and the baseline report has been developed.

No	Output	Outcome	Lesson learnt	Impact
12	To facilitate loan recovery for maize seed in the 5 project sites.	An overall recovery of about 90 per cent was recorded for maize seed loan in all 5 project sites during the reporting period.	Mkulungwe, kavu and mackenzie community has made strides in selling the maize and take the responsibility in meeting the 90 per cent share.	Money realised from maize sales sustains group bank accounts for future group IGAs. Money realised from maize sales has been used to purchase additional certified seed which has been given to group members.
13	To procure & provide certified maize seed to 150 farmers for 2010/11 farming season.	The project procured 90x 10kg (Pannar 53) maize seed which was shared among 150 farmers in Mackenzi, Munkungwe, kavu, Mundawanga & Maposa.	Farmers have had good crop germination for the past 4 years as a result of planting certified seed supplied to farmers by the project.	In 2010 /2011 seasons, good crop germination was noted in all farmer fields which received the certified seed. No complaints of poor germination had been received in the year under review from the farmers.
14	To facilitate the construction of 1 storage shed in Mankulungwe community.	The community has mobilised building materials i.e. Sand and bricks. The project has already purchased 40 pockets of cement, 30 iron sheets and 4 rigines. The builder has already been identified within the community and work is about to start since		Once the storage is constructed, recovered maize seed loan will be kept in a much safer place. The shed will also be used for other income generating activities like rearing of chickens for

No	Output	Outcome	Lesson learnt	Impact
		land where the shed will be constructed has been given by the council.		future sustainability of the group.
15	Conduct routine monitoring and inspection of livestock in all 5 project sites.	Monitoring visits was conducted	During the monitoring it was noted that Farmers needed orientation in animal husbandry by a qualified veterinary officer.	6 other household have received their share of the cuffed goats. Mackenzie community is starting to rear improved Chicken.

Food Security Program in the Eastern Region of Zambia funded by Canadian Grain Bank.

4. Agriculture Objective: 7000 households will produce enough food for 12 months in the next three (3) years.

- Enough Food: 1 Starch (i.e. Maize, Cassava, Sweet potatoes, rice etc. and 1 relish/vegetable (i.e.) beans, groundnuts, greens etc.)

ACHIEVEMENTS: In the table below we can see what has been done during the months of January to December of the year 2010.

Table 1

Presbyte ry	Target Communi ties	Target Farmers 10-11	Reached with food Dec 10	Reached without Food Dec 10	Gender F/M Dec 10	Traine d Active AVWs
Nsadzu	49	2500	1973	122	49/51	20
M/moyo	62	3000	2016	209	46/54	10
Kamoto	30	2500	1032	449	48/52	15
Nyanje 1	100	3000	1794	116	45/55	18
Nyanje 2	118	2000	1418	97	46/54	15
Total	359	13000	8233	993	47/53	78

AVWs = Agriculture Volunteer Workers

F= Female, M= Male

Notes / Comments:

An average of 7686 (F= 3612, M= 4074) attended trainings conducted during the year

- Nyanje 2 farmers had a tour to Nsadzu presbytery.
- Because of funding problems, previous AVWs have been asked to continue assisting before new ones are trained.
- In Nyanje Presbytery the Department will be implementing a Child Centred Community Development project in partnership with the Baptist World Aid Austria.
- 30 modern bee hives were procured and distributed to 3 farmer groups.

In Table 2 below shows the trainings done for AVWs and target farmers during the period.

Table 2

Type	Number	Organized by
AVWs	11	RCZDER
Group Training	51	RCZDER
Camp meeting	11	RCZDER- MACO
Demos	16	RCZDER
Mobile courses	12	RCZDER-MACO
Staff	1	RCZ-Diaconia

RCZDD = Reformed Church in Zambia Diaconia Department

MACO = Ministry of Agriculture & Co-operatives

Training Topics:

- **AVW Training:** review of activities and planning, reporting, Conservation Farming, Gender, crop marketing, land preparation and manure application, fish farming, fertility ditches, ripping, improved fallow, goat pens construction, gardening, farming as a business.
- **Group Training Topics:** fish farming, gardening, crop marketing, farming as a business, bee-keeping, irrigation, gender, residue management, leadership, record keeping, review and planning, poultry and pigs rearing, crop diversification, storage, crop diversification, improved fallow, manure application, conservation farming,

- **Demonstration:** applying of manure in fertility ditches, Conservation Farming, vegetable nurseries.
- **CAC:** Crop marketing, cooperative formation, input distribution, conservation farming, Review and Planning.
- **Mobile:** land preparation, fish pond construction and management, Bee-keeping, Conservation Farming, farming as a business
- **Farmer Exchange Visit:** OVC groupings, conservation farming, leadership
- **Staff:** Child Centred Community Development.

Table 3: Implementation

Type of activity	No of farmers	
	M	F
Crop rotation	5598	3287
Crop diversification	3766	3001
Conservation Farming	4391	1843
Manure application	4388	1721
Improved fallow	157	32
Biomass Transfer	68	35
Improved goat pens	37	12
Ripping	20	24
Improved Storage bin	53	29

Table 4: Fish Farming

Presbytery	No of fish ponds Individual Group		No of stocked Ponds
Madzimoyo	19	7	16
Kamoto	7	7	8
Nsadzu	3	1	4
Nyanje 1	3		2
Nyanje 2	8		8

The Average AVW Organization Capacity is medium (3)

Rating is 1..... 2..... 3..... 4..... 5.....

Eastern Region

(Low) (Medium) (High)

4 HEALTH

OBJECTIVE: 7000 children will maintain weight above the bottom line as determined by the monthly check ups in the next three (3) years.

Table 5

Presbytery	Under five (5) Target	Children Attended	Below line	Active CHWs	Average Malnutrition Rate
Nsadzu	2000	2099	262	19	12.5%
Nyanje 1	2000	2400	251	18	10.4%
Nyanje 2	2000	2257	210	15	10.7%
Madzimoyo	1500	1304	168	10	12.9%
Kamoto	2000	2476	446	15	18%
Total	9500	10,536	1337	77	7.9%

Comments:

- 8279 (F=4339 and M=3940) children attended the monthly growth monitoring.
- An average of 5680 mothers attended the health education talks conducted by the Staff and Community Health Workers.
- 18 cooking demonstrations conducted.
- Group trainings were conducted in all the Presbyteries and topics included De-worming, safe motherhood, Gender roles, causes and prevention of malaria and diarrhea, family planning, HIV/AIDS, VCT-Prevention of Mother To Child Transmission (PMTCT), Personal hygiene, growth monitoring.

The Average CHW Organization Capacity is medium (3)

Rating is 1..... 2..... 3..... 4..... 5.....

(Low) (Medium) (High)

7. HIV/AIDS-OVC

Objective: To strengthen 150 caregivers and families to support 350 OVCs affected by HIV/AIDS in the year 09-10.

Table 6.

Presbytery	No of target OVC groups	No of reached OVC groups	OVC supported		Care givers supported		OVC volunteers
			F	M	F	M	
Nsadzu	13	13	35	31	-	-	3
Nyanje	2	2	30	12	58	20	5
Madzimoyo	5	5	18	12	33	16	5
Kamoto	6	6	34	36	9	6	4
Total	26	26	117	91	100	42	17

Comments:

- Tiyanjane caregivers group sold the male goats and bought female goats.
- 6 goats which were re-distributed to OVCs from Tigwilizane group in Nsadzu have seven (7) new kids, and have since cut poles to construct a big goat pen.
- Spraying of goat was done during the quarter
- 18 existing neighbourhood committees were strengthened.
- Care givers support this quarter included training on manure application in gardening, fish farming, local chicken rearing, goat rearing, Bee keeping, HIV/AIDS, review and planning.
- 637 attended awareness meetings
- The OVC volunteers are supported by receiving monthly trainings.

Lives Transformed: A Success story of Lestina Banda of Kamoto Presbytery

Lestina Banda a widow whose husband passed on in 2002 has six (6) children, two (2) girls and four (4) boys lives at Tazwera village west of Chipata District. Lestina explains life has not been easy for her after the death of the husband which meant she had to provide food for the children as well as their education. She says for the past 5 years after the death of her



husband she had been experiencing poor harvest more especially maize which even takes a bigger part of her field. During that period she never had food all year due to low production because of

depleted soils. This prompted her and other elderly children to look for piece works in order to buy food.

Realising that her livelihood is dependent on farming she decided to join a farmer group in 2007 called '*Kaziputalimba*' meaning 'when you start something you need to persevere until you achieve your goal' as a way of hope to his depleted soils and eroded fields. This farmer group was working with Diaconia in collaboration with government from 2007 to 2010.

After training Lestina was one of the first farmers who didn't hesitate trying new things she learnt such as conservation farming, crop rotation and crop diversification. This time around Lestina grows not only maize and groundnuts as previous but has included sun flower and



cassava as field crops.

She choose to implement conservation farming with kraal manure though testifies that its hard work involved during the preparation of the field but the benefits are huge and says since 2008/2009 farming season when her field showed signs of life the cobs of the maize stocks have been big. With the use of conservation farming in her

field which she learnt Lestina now says hunger is the thing of the past as she is able to store enough for the family and sell surplus to buy other household necessities.

And because of her dedication towards work she was identified as one of the farmers who benefited under the loan program with a 'super money maker pump'. With the pump she has increased the area where she grows vegetables from quarter of a Lima to a Lima which has also increased her income which not only helped her to hire people to dig a fish pond but is also assisting in buying school requirements for her school going children. She is happy with the trainings which have built confidence in her and thanks Gods for the support cooperating partners are giving RCZ-Diaconia which is transforming people's lives. Lestina's future plans God willing is to build a house with burnt bricks and iron sheet.

Source: (RCZDD - Synod office Lusaka).

APPENDIX 6: BRIEFING NOTES DURING THE PLANNING MEETING

(Notes: Presented during the planning meeting in preparation for the Food Security Review in March 2011 in Maposa community).

1. Welcoming Remarks

The researcher welcomed all participants to the planning meeting and stated the objective for the two day meeting.

2. Presentation of the Brief notes by the Researcher

2.1 Introductory Remarks

Our vision for this food security review is not only to depict what impact the project has had for the past 5 years, but together staff, Agricultural Volunteer Workers and Community committee and the farmer beneficiary reflect on how to improve the impact in the community with project activities. As the project was now five years old since it was initiated, it is only healthy to sit back as an organization together with the community and its leaders to assess how things went and what impact there has been (Bragg in Samuel & Sugden 1987: 37).

In taking time together to look back over the past years you will be able to celebrate the accomplishments as you plan the way forward. I believe that this review will help you learn and improve and so should be a positive, affirming and growing process for all involved. It is my prayer that the review report will truly share the great accomplishments as well as the things that did not go so well.

2.2 The guiding Principle of the Review

The researcher stated that the review was to pay attention to the following:

- a) Seeing what it is now in the project and imagining what it could be like in the future.
- b) Appreciating what is good now and recognizing what could be improved to make things better.

2.3. Review Methodology

This review will use a participatory methodology through Focus Group Discussions. All stakeholders have been invited to the 8 days' workshop scheduled for the Month of April 2011. The participants in the food security review will include farmer beneficiaries, the community committee, the Development facilitator and the Agriculture Volunteer Workers.

2.4 Goal of the Food Security Review

The goal of this food security review is to hear what these participants will say about this food security program and how it has impacted and changed their lives. It would be interesting to hear success stories and also failures of the project.

2.5 Process of the Review

The review will have three phases:

Part 1: Go through the Log frame to update the group on the set objectives for 2007 to 2011.

Part 2: Project Stakeholders review and discussion of the questionnaire. This activity will bring together farmer beneficiaries, Community Committees, Agricultural Volunteers Workers (AVWs) and the Development facilitator. The questionnaire will guide the focus group discussions.

Part 3: Post Stakeholder Review: Draft report, Feedback workshop and Final report.

3. Closing of the Two Day Preparatory Meeting in March 2011

The researcher thanked all the people that attended the planning meeting and was looking forward to the actual food security review meeting set for the month of April 2011.

SECTION B: FIELD QUESTIONNAIRES

Serial No: _____

APPENDIX 7: SEMI STRUCTURED QUESTIONNAIRE

NDOLA RURAL FOOD SECURITY PROJECT EVALUATION

HOUSEHOLD QUESTIONNAIRE

Interview Date: _____ Interviewer's Name:

Checked by: _____

SECTION A: IDENTIFICATION

1. Name of Farming Community:

2. Name of Household Head:

3. Name of Respondent:

4. Sex: Male 1 Female: 2

5. Age of Household head/ Respondent: _____

6 Education of Household Head: 1) Lower primary, 2) Upper primary, 3) Junior Secondary, 4) Senior Secondary 5) Tertiary, 6) Never been to school

7. Marital Status of Household Head: Married 1 Single 2 Widow 3 Widower 4
Separated 5 Divorced 6

8. Household size and composition:

8.1 Total household size: _____ Males _____ Females _____

8.2 Age structure of the household:

(a) 15 years and below: _____ (b) 16 to 65 years _____ (c) above 65 years

9. Household's Occupation (Livelihoods):

9.1 Main occupation:

(a) Agriculture (crop farming):

(b) Agriculture (livestock farming):

(c) Agro forestry:

(d) Other agricultural

activities(specify): _____

(e) Other occupations (specify): _____

SECTION B: COMMUNITY PARTICIPATION

10. Did you participate in the initial planning of the Ndola Rural Food security project?

Yes 1 No 2

11. Was the community capacity built during this process e.g. able to make decisions?

(a)

(b)

(c)

12. What do you think went right but could have been done better during the 5 year implementation and do you think did not work well? Were you able to use local resources during the implementation process?

(a)

(b)

13. Were you satisfied with your level of participation and were it empowering enough and what lessons do you draw from it? (Learning points)

14. Explain your answer. _____

SECTION C: PROJECT ACTIVITIES

1. Training in Conservation Farming

15. What different types of conservation farming methods did you learn from the Ndola Rural Food Security Project?

No.	Method	Practicing (tick)	
		No	Yes
1	Crop Residue Retention		

2	Crop Rotation		
3	Agroforestry		
4	Pot holing and Minimum tillage:		
5	Other (specify):		

16. Now I am going to mention some statements. For each statement, I want you to tell me which conservation method it best describes. (Interviewer goes through the methods above again)

	Statement	Conservation Farming Method				
		CRR	CR	AF	PMT	N/sure
1	Not removing or burning crop residue (maize stalks) after harvesting					
2	Planting a different crop next year on the piece of land in question					
3	Growing nitrogen fixing shrubs or planting a crop side by side wild trees					
4	Digging basins for planting your crop					

17. Which of the above conservation farming methods are you practicing? How are you practicing them?

(a) Crop Residue Retention:

(b) Crop Rotation:

(c) Agroforestry:

(d) Pot holing and Minimum tillage:

(e) Other (specify):

18. Which of the above conservation farming methods are you not practicing? Give reasons for your answer?

(a) Crop Residue Retention:

(b) Crop Rotation:

(c) Agroforestry:

(d) Pot holing and Minimum tillage:

(e) Other (specify):

2. Provision of Seasonal Farm Inputs (Seed Loans)

19. What are the different types of seasonal farm inputs that you received from the Ndola Rural Food Security project in the last five-(5) farming seasons (2007/2008, 2008/2009, 2009/2010 and 1010/1011)?

Type of seed	Seed respondent received	
	Yes	No
Maize		
Beans		
Groundnuts		
Other:		

20. Would you have liked to receive other types of seed from the project other than the ones that you received?

Yes 1 No 2

21. Give reasons for your answer

22. Were the inputs adequate to enable you grow enough food and make your household food secure?

Yes 1 No 2

23. Give reasons for your answer.

24. If the seed inputs were not adequate, how did you address that problem?

- (a) _____
- (b) _____
- (c) _____

25. Explain the challenges that you faced in receiving inputs from the Ndola Rural Food Security project?

- (a) _____

(b) _____:

(c) _____

3. Improved Grain Storage Facilities

26. Has the community grain storage facility been useful to the community?

Yes 1 No 2

27. Give reasons for your answer

28. What challenges, if any, are associated with this grain storage facility?

29. How useful was the training you received from the project in storage management?

Explain your answer

30. What are the main problems that you have experienced in the last five-(5) farming seasons in marketing your crops?

4. Promotion of Agro-Forestry

31. Are you aware of a method used to improve soil fertility by planting special trees on the farm?

Yes 1 No 2

32. If yes, mention these trees (shrubs)

	Tree (shrub)	Tick
1	Sesbania - sesban	
2	Tephrosia Vogelli	
3	Musangu tree	
4	Gliricidia Sepium	

33. How did you come to know about this method?

	Way	Tick
1	Training from Diaconia	
2	Exposure visit to GART in Chisamba	
3	Farmer Field day	
4	Others- specify	

34. How useful were the ways in which you came to know about this method of conservation farming?

	Way	Scale		
		Very useful	Useful	Not useful
1	Training from Diaconia			
2	Exposure visit to GART in Chisamba			
3	Farmer Field day			
4	Others- specify			

35. Have you adopted this method?

Yes 1 No 2

5. HIV and AIDS

36. Have you received any HIV and AIDS awareness messages from the Ndola Rural Food Security Project?

Yes 1 No 2

37. If yes, can you mention the type of HIV and AIDS prevention messages that you have received?

(a) Abstinence..... 1

- (b) To be faithful to one faithful sexual partner.....2
- (c) To use a condom every time that one has sex.....3
- (d) To undergo Voluntary Counseling and testing (VCT).....4
- (e) Mother to Child Transmission of HIV and AIDS (PMTCT) 5
- (f) Other (specify): _____

38. Have any of the above HIV and AIDS prevention messages assisted you in improving the health status of your household in general and in particular food security? Give reasons for your answer.

Yes 1 No 2

- (a) _____

- (b) _____

- (c) _____

SECTION D: PROJECT EVALUATION USING STANDARD EVALUATION CRITERIA

1. Project Relevance

39. Do you think that the Ndola Rural Food Security project was necessary to address the problems of inadequate food in your household?

Yes 1 No 2

40. Give reasons for your answer

- (a) _____

- (b) _____

41. In your assessment of the work done by the Ndola Rural Food Security project in assisting your household to have adequate food, should the project continue?

Yes 1 No 2

42. Give reasons for your answer

(a)

(b)

(c)

2. Effectiveness

43. In your opinion have the project intervention improved your household livelihood and particular food security.

Yes 1 No 2

44. Give reasons for your answer

45. In your opinion, which project intervention has contributed most to improving your household livelihood?

3. Efficiency

46. When did your household start feeling the impact/benefit of participating in the project (positive change in your HH livelihood)? Year: _____

4. Project Sustainability

47. Which project activities are you able to continue on your own when the project comes to an end? Give reasons for you answer:

5. Project Impacts

48. Apart from food security, is there any evidence to prove that the project has contributed to the general improvement in the livelihoods and welfare of your household? Give concrete evidence.

Yes 1 No 2

Type of Houses			Type of Assets		
	Before (tick)	After (tick)		Before (No.)	After (No.)
Type of house			HH Assets		
Mud brick			Bed		
Concrete			Chairs		
			Bicycle		
Roofing			TV		
Grass			Radio		
Roofing sheet			Sofa		
Cut drums			Others		
Other _____					
No. of rooms			Productive Assets		
2			Land (ha)		
2-4			Cattle		
>4			Sewing machine		
Other			Axe		
Painted			Shovel		
Plastered			Other		
Rough cast			Others		
Window (glass)			Meals		
			Type of crops grown		

49. School Attendance

Category of children	Number of Children	
	Before	After
Number of male children (all)		
Number of male children of school age		
Number of male children of school age in school		
Number of female children (all)		
Number of female children of school age		
Number of female children going to school		

50. How did your involvement in the project impact on your ability to send children to school and meeting other school requirements.

51. In your assessment, when the project comes to an end; is your household food security and livelihoods going to be negatively or positively affected? Give reasons for your answer.

Yes 1 No 2

(a) _____

(b) _____

(c) _____

52. Apart from the Ndola Rural Food Security project, are there any other organizations assisting households in your community to have adequate food?

Yes 1 No 2

53. If yes, give name of these organizations, and explain how they are assisting households in your community to have adequate food.

(a) _____

(b) _____

(c) _____

54. When you compare the work being done by other organizations and that of Ndola Rural Food Security Project; who is doing a better job? Give reasons for your answer.

(a)

(b)

(c)

APPENDIX 8: FOCUS GROUP DISCUSSION

Ndola Rural Food Security Project Evaluation

1. IDENTIFICATION

Type of activity: _____

Name of community: _____ Date: _____

Time discussion started: _____ Time discussion ended: _____

Summary of participants: No. of women: _____ No. of men: _____ Total Adults: _____

No. of youth: No. of male _____ No. of female _____ Total youth: _____

Names of facilitators: _____

2. INTRODUCTION

Thank you very much for agreeing to participate in this focus group today. My name is William Zulu, and my colleague is Mr. Philemon Banda. I am a PhD student with the University of Stellenbosch. I am conducting a case study on food security for the Council of Churches in Zambia which is implemented by its member Church the Reformed Church in Zambia. The focus of this case study is to evaluate the Ndola Rural Food Security Project implemented by the Reformed Church in Zambia (RCZ). For this exercise, we are interested in learning more about the experiences that you have had with the project for the past five years, i.e. did you fully participate in its implementation, was the community capacity built during the process, were you able to mobilize own local resource and how sustainable is this project. To this effect we will ask you some questions around the project activities. Anything you can share with us about your experiences at personal, household or community level would be very helpful. Results of this discussion will be shared with CCZ and the

implementers of this project RCZ but no names will be mentioned in the report; so feel free to say anything that is relevant to our discussion.

The issues we are going to discuss today do not have right or wrong answers. Everyone should feel free to participate; we value the views of everyone in the group.

Now I would like to ask if there are any questions or concerns before we proceed.

3. BACKGROUND INFORMATION

- Let us begin by introducing each other: say your name, age and livelihood activities you are involved including those introduced by the RCZDD project in which you have participated.

	Demographic Characteristics			Livelihoods						
	Name	Sex	Age	Farm	Non-Farm	C/farming	Seeds	Storage facilities	Agro Forestry	HIV/AIDs
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										

4. COMMUNITY PARTICIPATION

2. Where you involved in the set up of the food security project in 2007?
3. How has RCZDD empowered you in this food security project?
4. Has the project assisted you in overcoming household financial challenges?

PROJECT ACTIVITIES

Conservation Farming

5. **We have been told that under the project you learnt some conservation farming methods.** What conservation farming methods did the project teach you? (Mentioning and describing the methods in detail)
6. **Let us now look at the advantages and disadvantages of each farming method?** (Of course all methods were introduced to have positive impacts such as improving household food security and other but their applicability and performance may vary by farmer beneficiary). Mention some of the disadvantages?
7. How have the various project activities contributed to improvements in the food security and other livelihoods in your community?
 - (a) Conservation farming _____
 - (b) Crop diversification _____
 - (c) Seed _____
 - (d) Savings scheme _____
 - (e) Grain storage facilities _____
 - (f) Agro-forestry and water conservation _____
 - (g) HIV and AIDS conservation _____
 - (h) Human Rights awareness _____
 - (i) Gender _____

Seed Scheme

8. How has the seed scheme from RCZDD improved crop performance?
9. Will you be able to grow and harvest more crops such as maize when the RCZDD project stops the seed loans? Explain your answer.

Grain Storage Facilities

13. How were farmers in this community storing their grain before seed banks were established?.
14. How has the existence of the new storage facility improved storage of seed?

15. What are the challenges with the marketing of your produce?

Agro-forestry

16. What do you understand by agro forest?

17. How sustainable is this type of agriculture to this community? (Also mention the challenges)

18. How has crop diversification improved yield of the crops involved?

HIV/AIDS AND HUMAN RIGHTS

19. What training did you receive in HIV/AIDS?

20. How have HIV/AIDS impacted on the implementation of the project: participation or lack of it by certain HHs?

GENDER MAINSTREAMING

21. How has the issue of women and men participation been considered in the project?

RECOMMENDATION

22. What recommendations are you making to CCZ for future action?

APPENDIX 9: CASE STUDY GUIDE

Case No: _____

Case Study Guide

SECTION A: IDENTIFICATION

1. Name of Farming Community: _____
2. Name of Respondent: _____
3. Name of Household head: _____
4. Sex: Male 1 Female: 2
5. Age of Respondent: _____
 Education of Household Head: 1) Lower primary, 2) Upper primary, 3) Junior Secondary, 4) Senior Secondary 5) Tertiary, 6) Never been to school
6. Marital Status: Single 1 Married 2 Divorced 3
 Separated 4 Widow 5 Widower 6
7. Household size and composition:

	Type	Age range													
		<5		5-10		11-15		16-20		21-35		36-45		>46	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F
1	Own children														
2	Orphans														
3	Other relatives														
4	Totals														
	Total Male (including respondent, spouse and HH Head)														
	Total Female (including respondent, spouse and HH Head)														

SECTION B: BACKGROUND INFORMATION

8. How long have you been living in this community? _____
9. Why did you come to live in this community? _____

10. What are the sources of your household's livelihood (Household's Occupation):

Main occupation:

(a) Agriculture (crop farming): _____

(b) Agriculture (livestock farming): _____

(c) Other agricultural activities
(specify): _____

Other occupations (specify):

SECTION C: PROJECT ACTIVITIES

10. When did you join the project? _____

11. What motivated you to join the project? _____

12. In what project activities was your household involved in?

	Conservation farming	Seed loans	Storage facilities	Agro-forestry	HIV/AIDS
Activities HH was involved in (tick)					

SECTION D: PROJECT IMPACTS

13. How has your household benefited from each of the above project activities?

(a) Conservation Farming: _____

(b)Seed Loans: _____

(c)Storage Facilities: _____

(d)Agro- forestry: _____

(f)HIV/AIDS:

14. Critical Success Factors

Introduction: You have been very successful in using the support from the project to improve the livelihoods of your household including food security.

15. What type of support from the project has made you very successful?

(i) _____

(ii) _____

(iii) _____

15. Can you mention the most critical factors at personal, household and community levels that have contributed greatly to your success?

(a) Personal Factors:

- (i) _____
- (ii) _____
- (iii) _____

(b) Household Factors:

- (i) _____
- (ii) _____
- (iii) _____

(c) Community Factors:

- (i) _____
- (ii) _____
- (iii) _____

(d) Other Factors:

- (i) _____
- (ii) _____
- (iii) _____

16. Household Outputs

What type of crops did you grow from the 2007/2011 farming seasons? Mention the crops; area under cultivation (Ha, Acres, Limas), and yield. If the conservation farming was used, state whether it was a single method, or used a combination of methods.

2007/2008 Farming season

Type of Crop	Farming Method	Area under Cultivation(Ha, Acres or Limas)	Yield(Bags, Medas, or Kg)
1. Maize	1.C/Farming		
	(a)Single method(specify)		
	(b)Combination of methods(specify):		
	2.Modern		
	Traditional		

2008/2009 Farming season

Type of Crop	Farming Method	Area under Cultivation(Ha, Acres or Limas)	Yield(Bags, Medas, or Kg)
1. Maize	1.Conservation Farming		
	(a)Single method(specify)		
	(b)Combination of methods(specify):		
	2.Modern		
	Traditional		

2009/2010 Farming season

Type of Crop	Farming Method	Area under Cultivation(Ha, Acres or Limas)	Yield(Bags, Medas, or Kg)
1. Maize	1.Conservation Farming		
	(a)Single method(specify)		
	(b)Combination of methods(specify):		
	2.Modern		
	Traditional		

2010/2011 Farming season

Type of Crop	Farming Method	Area under Cultivation (Ha. Acres or Lima)	Yield (Bags, Medas or kg)
1. Maize	1. Conservation farming		
	(a) Single method (specify)		
	(b) Combination of methods (specify)		
	(2) Modern method		

17. Type of House and Household and Productive Assets

Who owns the house you are currently living in? Renting 1 Owned by respondent/
relative 2

Description of House, and Assets and School attendance before and after the project intervention:

Type of Houses			Type of Assets		
	Before (tick)	After (tick)		Before (No.)	After (No.)
Type of house			HH Assets		
Mud brick			Bed		
Concrete			Chairs		
Pall and dugger			Bicycle		
Roofing			TV		
Grass			Radio		
Roofing sheet			Sofar		
No. of rooms			Productive Assets		
<2			Land (ha)		
2-4			Cattle		
>4			Sewing machine		
Other			Axe		
Painted			Shovel		
Plastered			Other		
Rough cast			Others		
Window (glass)			Meals		
			Type of crops grown		

18. Which of the above assets did you acquire as a result of your participation in the project? _

19. School Attendance

Category of children	Number of Children	
	Before	After
Number of male children (all)		
Number of male children of school age		
Number of male children of school age in school		
Number of female children (all)		
Number of female children of school age		
Number of female children of school age in school		

20. How did your involvement in the project impact on your ability to send children to school and meeting other school requirements.

21. Apart from food security and assets, is there any evidence to prove that the project has contributed to the general improvement in the livelihoods and welfare of your household? Give concrete evidence.

Yes 1 No 2
(a)

(b)

(c)

22. In your assessment, when the project comes to an end; is your household food security and livelihoods going to be negatively or positively affected? Give reasons for your answer.

Yes 1 No 2
(a)

(b)

(c)

SECTION C: GENERAL

APPENDIX 10: SUCCESS STORY OF A WIDOW FARMER



Diakonia Zambia—News from the Toribios

CRWRC Zambia, Post Net Box 757, Manda Hill, Lusaka, 15301 Zambia
 etoribios@crwrc.org

JANUARY-MARCH 2009

A Widow's Mite Turned into Might

In Zambia, 68 % of the population lives below the poverty line in predominantly in rural areas. More than 22% of Zambia's 11 million people live in female headed households. These households are disproportionately poor. Widows are among the most vulnerable poor in this country.

Amidst this, one day I met Amayi (woman) Agatha Makasa, a widow who is an incredible example of life transformed, sustained, and abundantly blessed by our Lord Jesus. A mother of eight children and grandmother, Amayi Agatha is in her sixties and looks younger than her age. She has been a widow for more than five years. Despite her loss, her community considers Amayi Agatha a hard working farmer, serious learner, entrepreneur, brick maker, and role model

Amayi Agatha has been an active member of the Maposa Farmers Group, Ndola Rural, Copperbelt, Zambia for three years now. This group of 100 farmers is assisted by RCZ- Diaconia Department Western Region (RCZ-DD), a CRWRC partner. RCZ-DD helps Maposa Farmers Group with food security by providing training in farming skills that focuses on conservation farming, crops diversification, inter-cropping, and agriculture marketing. The farmers are also receiving certifi-

fied maize seeds for the first and second years.

Like a young pupil, Amayi Agatha absorbed all this new learning and immediately applied it. When I visited her farm three weeks ago, I saw that her newfound learning was put to good use.

Healthy, bountiful crops of maize, peanuts, and beans warmly greeted us.

Amayi Agatha is now able to send her school-aged children and grandchildren to school. She even bought a bicycle, the main mode of transportation in rural Zambia. To top it all, she was able to build a modest brick house from the proceeds of her crop!

Not only is Amayi Agatha's life an amazing example, her self-esteem also has been enhanced by the program.

When we spoke with her, she smiled and responded to our questions with confidence. Her

thankful attitude to God was so contagious, overshadowing others' complaints of lack or of having nothing. Indeed, she has been acknowledged not only by the farmers group but by the whole village as a role model to emulate.

When asked about her hope for the future, Amayi Agatha responded, *"I hope that I could continue to teach other widows like me about the farming I am doing right now. Lord willing, in the future, I want to be a commercial farmer."*



Agatha standing at the door of her new house

He is Our Home: Extended Family Phil-Zam Style

In the first week of September, we were back in Zambia after two months of vacation in the Philippines. Eli and Evelyn spent five weeks in North America. To say that we immensely enjoyed the Philippines is an understatement. We really enjoyed being with family again, seeing friends,



The Toribios with Antida

being with LBCRC, relishing

our local food, seeing lots of people in the big malls, and other activities. It was so good being with our aging parents again. The kids especially enjoyed being with their cousins and their old classmates and having the freedom to walk in the streets and malls with them.

We so enjoyed home that we brought a part of it with us. We brought our Antida with us to Zambia! Actually, she joined us to take care of Ian and Nadine at the start of the school year while Eli and Evelyn are away for deputation. Antida stayed with us until January 1, 2009. It was sad seeing her go. We really miss the Philippines, especially Ian and Nadine. It's always hard to come

back to the field from our home country.

The Lord tells us that He is our home. In Psalm 90:1, "Lord you have been our dwelling place (home) throughout all generations." I guess it's a lesson all Christians have to learn, or rather a reality that all of us have to wake up to. We are not of this world; we are aliens and strangers in this world. It seems more real to us right now because we indeed are now experiencing being aliens in another land.

It's a good lesson for us as a family. We now tangibly know another facet of our beautiful Lord—HE is our home.

FRONTLINE INTERCESSION

1. Please pray for good harvest in Zambia.
2. Please pray for our kids. As pre-teens and teenagers, they miss having the freedom to walk the streets and malls on their own. Pray for friends. Praise God for the newly formed Christian youth group.
3. Pray for Evelyn as she starts to explore meaningful involvement where she can use her gifting and skills for God's kingdom .
4. Pray for the new missionary family that the Lord will call to replace the Bootsmas who have served as Program Consultants for the last ten years.
5. Pray for Eli as he leads the CRWRC Zambia Team and the Word & Prayer group with partner leaders.



CRWRC

Living Justice. Living Mercy

Source: (On line information at: <http://www.crwrc.org> / eritoribio@crwrc.org).

APPENDIX 11: MILLENNIUM DEVELOPMENT GOAL'S (MDG'S)

Table.6: (MDG's).

- | | |
|---------------|--------------------------------------------------------|
| (i) | 1. Eradicate extreme poverty and hunger by 2015 |
| (ii) | 2. Achieve universal primary education by 2015 |
| (iii) | 3. Promote gender equality and empower women |
| (iv) | 4. Reduce child mortality by 2015 |
| (v) | 5. Improve maternal health by 2015 |
| (vi) | 6. Combat HIV/AIDS, malaria, and other diseases |
| (vii) | 7. Ensure environmental sustainability |
| (viii) | 8. Develop a global partnership for development |

Source: (Stott: 2006)

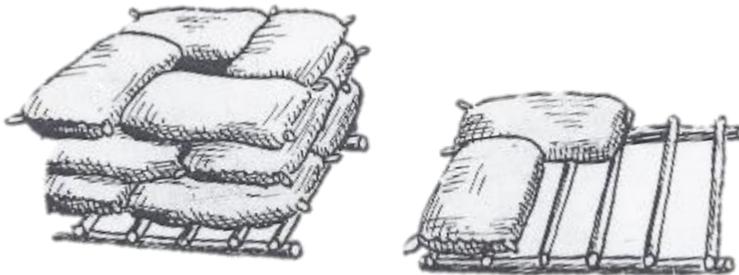
APPENDIX 12: GRAIN STORAGE

Using Sacks for grain storage

Storing grain in sacks is useful if there are large quantities to store. If theft from outside granaries is common, sacks can be stored in a room and locked. Sacks are best stored in a room with concrete floors and walls.

Sack should never be stored directly on the floor. Make strong frames from poles or wood. Stack the sacks on these frames allowing an open space in the middle for air. Don't let the sacks touch the walls.

If the sacks are turned twice each day for the first two weeks, most pests will be destroyed since pests need to fix themselves into one position to start eating into a grain. Regular turning prevents this and results in pests dying of hunger



GRAIN STORAGE

Simple improvements to local grain stores may help reduce the loss of grains to pests and diseases. Most areas have different requirements and different traditional storage methods.

Here are some points to consider when building grain stores:

- Raise the platform to over one metre above the ground to prevent rats and mice jumping up
- Make rat guards from old tin cans and place at knee height around the legs
- Coat the inside of the basket with traditional plaster
- Dip poles into old engine oil to give protection from termite damage before they are put in the ground.



Source: (Dowa 1996: 285f).

APPENDIX 13: COUNCIL OF CHURCHES IN ZAMBIA MEMBERSHIP

ANNUAL REPORT 2003, CCZ

Communication, Social Justice and Peace

This department was set up to create public awareness on the Churches' role in national development. The department also works to increase awareness and appreciation of the Churches' response to socio-economic issues such as good governance and human rights.

HIV/AIDS Resource and Training Centre

The main aim of this department is to provide information, training and resources to the churches and their constituent communities to reverse the spread and address the impact of HIV/AIDS. Work at present focuses on the facilitation of short courses, mobilization of relevant literature, and provision of conference and accommodation facilities.

Education and Training

The department exists to aid member churches with administrative skills to manage, run and provide quality education in the two schools owned by the member churches as well as the two teacher's training colleges owned by the Council.

Youth

The general aim of the Youth Desk is to contribute to other stakeholders' efforts in improving the welfare of youth in CCZ member churches by facilitating and achieving socio-economic justice, overcoming violence, working at ecumenical formation and empowerment, involving youth in decision making bodies and reducing HIV infection rates among the youth.

Chaplaincy Theology & Research

The main aim of this department is to provide ecumenical worship and counseling to students at the University of Zambia, main campus.

NATIONAL, REGIONAL AND INTERNATIONAL LINKS

The Council of Churches in Zambia, in pursuit of justice and peace, works closely with organisations with similar goals locally, regionally and internationally. The Council is also affiliated to a number of regional and international networking initiatives such as the World Council of Churches, Fellowship of Christian Councils in Southern Africa and the All Africa Conference of Churches.

MEMBERSHIP

The Council of Churches in Zambia has a total membership of 22 protestant churches and 19 church-related organisations.

The member churches include: African Methodist Episcopal Church, Anglican Church, Apostolic Faith Church, Brethren In Christ, Central African Committed Church, Christian Marching Church, Christian Redeemed Church of God, Church of Central African Presbyterian, Community of Christ Church, Evangelical Lutheran Church, Greek Orthodox Church of Zambia, Kimbanguist Church, Moravian Church in Zambia, Pilgrim Wesleyan Church, Reformed Church in Zambia, Salvation Army, Salvation