

**An Assessment of Women's Participation in Agricultural
Production: A Case Study of Marange Irrigation Scheme in
Zimbabwe**

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Declaration

I declare that this thesis entitled *An Assessment of Women's Participation in Agricultural Production: A Case Study of Marange Irrigation Scheme in Zimbabwe* is my own work. It has not been submitted for any degree or examination at any other university and all the sources I have used or quoted have been indicated and acknowledged as complete references.

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Signed:



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ACRONYMS

AGRITEX	Department of Agricultural and Extension Services
AIDS	Acquired Immune Deficiency Syndrome
AGRA	Alliance for a Green Revolution in Africa
CEDAW	Convention on The Elimination of all forms of Discrimination Against Women
COMESA	Common Market for Eastern and Southern Africa
CSOT	Community Share Ownership Trust
ECLA	The Commission for Latin America
FAO	Food and Agriculture Organisation
GDP	Gross Domestic Product
GMB	Grain Marketing Board
GNP	Gross National Product
HIV	Human Immune Virus
IFAD	International Fund for Agricultural Development
IMF	International Monetary Fund
NGO	Non-Governmental Organisation
NGP	National Gender Policy
PAR	Participatory Action Research
PRA	Participatory Rural Appraisal
PRFT	Poverty Reduction Forum Trust
RDC	Rural District Council
SADC	Southern African Development Community
UN	United Nations
UNDP	United Nations Development Programme
VIDCO	Village Development Committee
WADCO	Ward Development Committee
WID	Women In Development
ZIMSTAT	Zimbabwe National Statistics Agency

ABSTRACT

Agriculture is the chief economic activity in many rural communities and women who make up the majority of the rural dwellers play a focal role in this sector. Despite efforts aimed at promoting women's rights and ensuring gender equality in development, researchers have shown that women are still marginalised and have less access to productive resources needed for effective agricultural production. Using quantitative and qualitative research methodologies, the research investigated the nature and the extent of women's participation in agricultural production at Marange Irrigation Scheme in Marange Communal Land, Zimbabwe. The participatory development theory was employed to guide the research. Data collection tools utilised in this study were a well structured questionnaire, semi-structured individual interviews and observation. Analysis of quantitative and qualitative data was done using descriptive statistics and thematic analysis respectively.

The results of this study showed high level of women's participation in most farm activities but low participation in extension programmes. The socio-economic variables considered for Pearson's correlation tests – age, household income, education, land size and number of dependents – showed no significant relationship with the level to which women participate in agricultural activities. The findings of this study revealed that the key factors constraining women's participation in agricultural activities were lack of capital, limited agricultural inputs, market constraints and water shortages. In addition, the research showed that farmers were not fully involved in every step of the irrigation development project. Consequently, women's agricultural productivity was low and the sustainability of the project was uncertain. Despite these challenges, the results of this study revealed that participating in farming can instil a sense of ownership, enhance capacities and improve livelihoods. The level of women's participation in farm decision-making was found to be high.

This study advances that addressing women's agricultural needs and improving their access to agricultural productive resources could result in effective participation of women in agriculture and meaningful agricultural productivity. In line with the participatory development theory, the study further contends that the full participation of women, as well as other intended beneficiaries, in the development process could be the key to sustainable rural development initiatives. This could help bring the much needed transformation in rural areas.

KEYWORDS

- *Women*
- *Participation*
- *Agricultural Production*
- *Marange Irrigation Scheme*
- *Access*
- *Productive Resources*
- *Food security*
- *Sustainability*
- *Development*
- *Inclusion*
- *Decision-Making*
- *Empowerment*
- *Ownership*



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CHAPTER ONE

INTRODUCTION TO THE STUDY

1.1 Introduction

Agriculture is the cornerstone of many African economies, especially sub-Saharan Africa. It provides a relatively large portion of the Gross Domestic Product (GDP) in sub-Saharan Africa and it is also the main source of foreign currency (Alliance for a Green Revolution in Africa (AGRA), 2013). Not only is agriculture key to economic growth but it is also the principal source of food and livelihood in the rural areas. Women, who form the majority of rural dwellers, play a significant role in this sector (Food and Agriculture Organisation (FAO), 2011; Goebel, 2005; Singh & Vinay, 2013). Rural women contribute substantially to the agricultural labour force in many African countries (Ahmed *et al*, 2012; FAO, 2011). For example, FAO (2011:11) records that women provide over 50% of the agricultural labour force in countries such as Nigeria, Cameroon and Zambia. However, agriculture has been underperforming in developing nations (FAO, 2011). Between 2011 and 2013, about 21.2% of the people in Africa were estimated to be undernourished, approximately 24.8 % of them in sub-Saharan Africa (FAO, 2013:8).

A wide variety of literature (FAO, 2011; Mehra & Rojas, 2008; World Bank, 2009) acknowledges that one of the main reasons for the underperformance of agriculture in developing countries is that women do not have equal access to resources and opportunities needed for increased agricultural production. Though laws have been enacted that recognise women as subjects of development, they still face a number of challenges which impede their effectiveness in agricultural production (Karl, 2009; Kayarkanni, 2012; FAO, 2011). Their ability to produce effectively is stifled by their cultural and social status (Boserup, 1970; FAO, 1995; Goebel, 2005). Increasing women's agricultural yields would raise agricultural output in developing countries by 2.5 - 4% and reduce hunger by 12 - 17% worldwide (FAO, 2011:5).

In light of the above, the aim of this research was to investigate the nature and the extent of women's participation in agricultural production at Marange Irrigation Scheme in Marange Communal Lands, Zimbabwe. Both quantitative and qualitative methods of research were employed in this study and the humanistic approach/participatory development theory was

used as the basis upon which the research was conducted. In light of the findings of this research, recommendations were put forward with the view to strengthen the participation of women in agricultural production for increased production.

Chapter One presents the background and contextualisation to the study and includes the following sections of the chapter (a) background to the research and study area, (b) significance of the study, (c) problem statement and research questions, (d) aim and objectives of the research and (e) research design. The chapter concludes with an outline of the thesis.

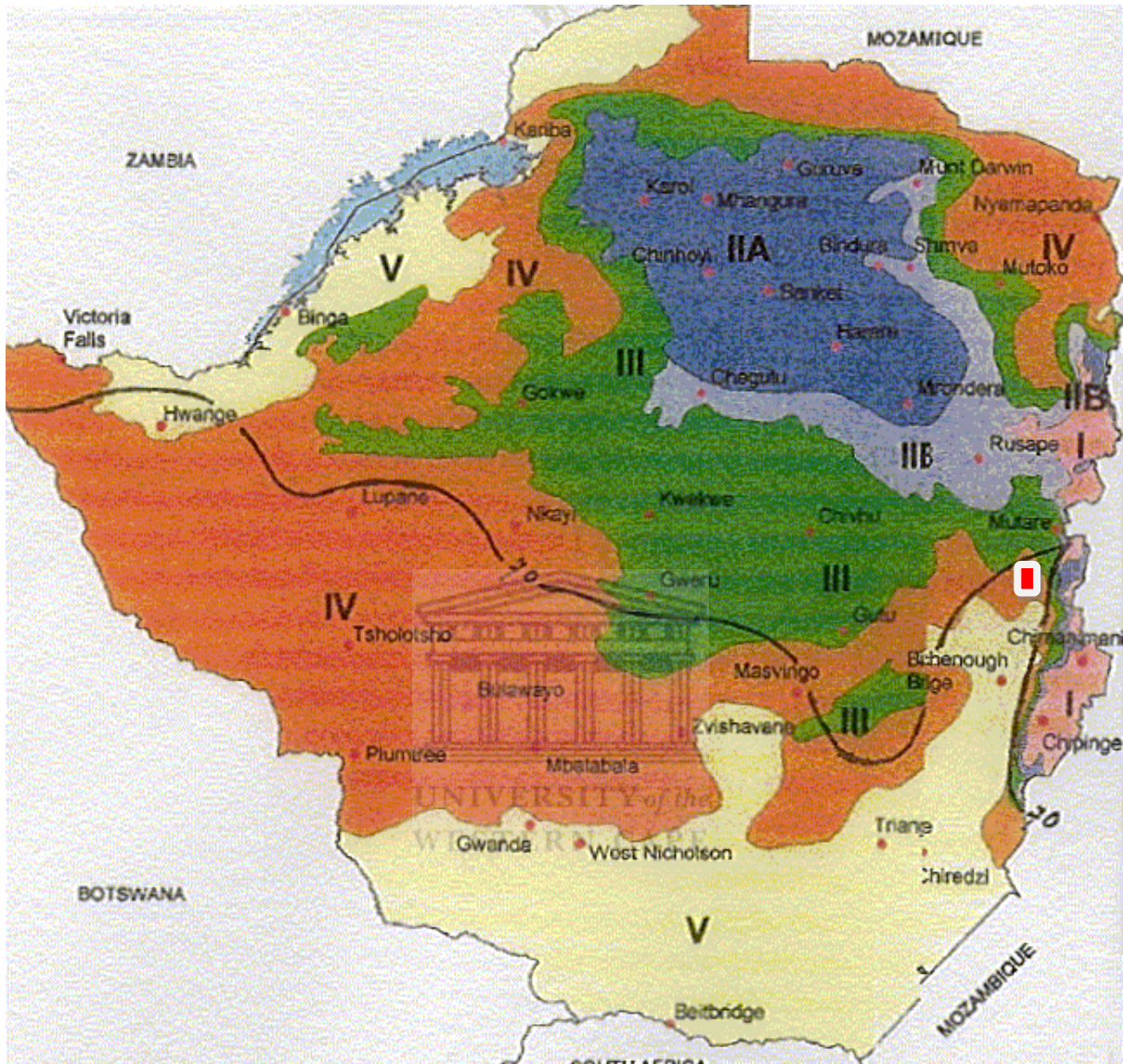
1.2 Background and Contextualisation

1.2.1 Agriculture in Zimbabwe

Zimbabwe is mainly an agro-based economy. According to Zimbabwe National Statistics Agency (ZIMSTAT) (2013a), agriculture contributes about 19% to Gross Domestic Product and is one of the country's foreign currency earners. Zimbabwe records a negative GDP each time there is low agricultural productivity. The manufacturing sector also depends on agriculture for the supply of raw materials. As much as agriculture boosts the economy, it also sustains many Zimbabweans, particularly rural dwellers who depend on agriculture for their livelihood. According to ZIMSTAT, 50 percent of the entire population, 13 million Zimbabweans, earn their income from agriculture (The Herald, 2013). The report also concludes that rural women form the majority of the people working in agriculture.

The land of Zimbabwe is divided into five natural regions (shown in Figure 1) that are distinguished by their annual rainfall, soil quality and type of vegetation. Agriculture in Zimbabwe depends mainly on rainfall which occurs mostly between November and March. Most of the crops are planted between November and December and harvested between January and March. Maize, the staple food of Zimbabwe, dominates production.

Figure 1: The Five Natural Regions of Zimbabwe



Source: FAO, 2000

LEGEND

Natural Regions

I Specialised and Diversified Farming Region

IIA Intensive Farming Region

IIB Intensive Farming Region

III Semi-intensive Farming

IV Semi-extensive Farming

V Extensive Farming


 Marange Irrigation Scheme

Table 1 below provides a concise description of each of the natural regions of Zimbabwe, their rainfall characteristics and farming systems. Natural regions I, II and III are suitable for crop production and livestock rearing, while regions IV and V are too dry for meaningful crop production without irrigation, but are suitable for livestock rearing.

Table 1: Description of the Natural Regions of Zimbabwe

Natural Region	Area (km²)	% of Total Area	Description
I	7 000	2	Receives more than 1 000mm of rainfall per annum. Suitable for fruit production, forestry and intensive livestock rearing.
2	58 600	15	Annual rainfall ranges between 750-1000mm. Specialises in crop farming and intensive livestock breeding.
3	72 900	19	Receives between 650-800mm of rainfall per year. Ideal for livestock production, fodder and cash crops.
4	147 000	38	Annual precipitation ranges between 450-650mm per annum. Specialises in extensive livestock breeding and drought resistant crops.
5	104 400	27	Receives very low, erratic rainfall. Suitable for extensive and game ranching.

Source: Adapted from FAO, 2000; ZIMSTAT, 2013:15

The agricultural sector in Zimbabwe has been underperforming since 2000. According to ZIMSTAT (2013a:20), the low productivity can be attributed partially to the “resettlement of communal farmers and the reallocation of labour of those who previously worked on communal lands.” Over 300 000 households were resettled on more than 6 million hectares of land during the 2000 land reform programme. It was envisaged that the land reform programme in Zimbabwe would help reduce poverty and enhance food security among rural households with little or no land ownership (ZIMSTAT, 2013a). However, other factors such

as poor agricultural technology, lack of draught power, severe shortages of productive resources like seeds, fertiliser and fuel as well as persistent droughts have also contributed to the decline in agricultural productivity (Muir-Lesesche, 2006; Poverty Reduction Forum Trust (PRFT), 2013; ZIMSTAT, 2013a).

Zimbabwean agriculture has been plagued by recurrent droughts and a large proportion of Zimbabwe's population is food insecure. Rural Livelihoods Assessment Report estimates that 1.6 million people in the rural areas were in need of food assistance between January and March 2013 (Zimbabwe Vulnerability Assessment Committee, 2012:96). Food insecurity is most common in the low rainfall areas such as Matebeleland South, Masvingo and Matebeleland North (ibid). Poverty is also more prevalent in rural areas than in urban areas (ZIMSTAT, 2013a). The most severely affected are households that depend mainly on agriculture in communal lands and resettlement areas. Communal lands are located in regions that are characterised by low annual rainfall, drought and infertile soils. Meaningful crop production in such areas is difficult without irrigation.

1.2.2 Smallholder Irrigation Farming in Zimbabwe

Smallholder irrigation farming in Zimbabwe was commissioned in 1913, well before the dawn of independence, as a means to mitigate drought (Chazovachii, 2013). It is still commonly practised in drought-prone areas, being seen as the best way of boosting agricultural production and as the panacea to food security at household level. Muir-Leresche (2006) notes that irrigation significantly reduces food insecurity exacerbated by drought and rural dwellers benefit greatly as they produce both for subsistence and the market. It is also believed that smallholder irrigation has the potential to alleviate poverty as it reduces hunger, malnutrition and unemployment (Chazovachii, 2013; Jayne & Rukuni in Manzungu & Van der Zaag, 1996). Irrigation schemes are regarded as the basis for development in communal areas (Manzungu & Van der Zaag, 1996). Not only are irrigation schemes developed in rural areas to reduce food insecurity and poverty but also to empower the rural dwellers (Chazovachii, 2012). Rural communities are afforded the opportunity to engage in activities that improve their livelihoods and well-being. Women, who make up the majority of the rural dwellers, play a pivotal role in irrigated farming (Chancellor, 1997; Chazovachii, 2012).

Nonetheless, various writers note that irrigation schemes in Zimbabwe have been characterised by low productivity and have not contributed much to the growth of the

country's economy due to a number of factors such as poor access to markets, limited access to water, financial constraints and poor management of the irrigation schemes (Chazovachii, 2013, Makhado *et al*, 2006; Mutambara and Munodawafa, 2014). Given this background, one of the objectives of this study was to establish challenges faced by the female farmers at Marange Irrigation Scheme.

1.2.3 Description of the Study Area: Marange Irrigation Scheme

The study was conducted at the Marange Smallholder Irrigation Scheme in Ngomasha community, in the Marange Communal Lands. Marange Communal Lands are located South West of the city of Mutare in Manicaland Province. Mutare Rural District has two divisions, east (Zimunya) and west (Marange). Marange begins from the Odzi River and stretches westwards up to the Save River where it borders Buhera district (Poverty Reduction Forum Trust (PRFT) Report, 2013). Marange Irrigation Scheme was established in 1936 by the then Rhodesian government to reduce food insecurity. It utilises a surface/flood irrigation system with water drawn from the Odzi River. Villages benefitting from the scheme are Ngonya, Njerere, Shundure and Mwandambira. The irrigation scheme covers 233 hectares, occupied by 210 plot holders. Marange Irrigation Scheme is located in Natural Region IV, highlighted in Figure 1. As described earlier, natural region IV is characterised by low rainfall (450–650mm per annum), high temperatures, dry spells and sparse vegetation (ZIMSTAT, 2013a). Despite being rich in diamonds, Marange is known for high rates of food insecurity, poverty and incidences of HIV/AIDS. This scheme was chosen because it is one of the oldest schemes in Zimbabwe but has little or no academic information written about it. Extension services at Marange Irrigation Scheme are provided by the Department of Agricultural, Technical and Extension Services (AGRITEX).

1.3 Significance of the Study

Various scholars have documented that women are the backbone of food security especially in the rural areas (Ahmed *et al*, 2012; Bhat *et al*, 2012; FAO, 2011). Not only are women responsible for purchasing, preparing and processing food but also play a focal role in national agricultural production. However, though women make considerable contribution to agricultural production and food security, various researchers state that this contribution is often unrecognised, under counted and undervalued especially in developing nations (Bhat *et*

al, 2012; Farid *et al*; Kayarkanni, 2012; Singh & Vinay, 2013). Furthermore, women have minimal control over key productive resources necessary for effective production, such as land, credit and extension training services (Rahman, 2008). It is argued that the world's food needs by 2020 will largely depend on "the capabilities and resources of women" for they are the main food producers, especially in sub-Saharan Africa (Brown *et al* in Ndifon *et al* 2012:319).

It is crucial, therefore, to investigate the nature and extent to which women participate in agricultural production as this could improve women's participation and bring about rural development. It is argued that eliminating impediments to women's effective participation in agriculture could result in increased food production that would see the reduction of household food insecurity (Ahmed *et al*, 2012). Last but not least, it is envisaged that this study will allow policy makers and development practitioners to have a deeper knowledge and understanding of the challenges facing women and come up with informed and better ways of ameliorating women's position in agriculture.

1.4 Motivation of the Study

The motivation of this study is derived from the researcher's own experience as a farmer in Marange over a period of ten years. Rural women in Zimbabwe spend most of their time in agriculture, growing seasonal crops such as maize, beans, wheat, tomatoes and onions. However, rural women farmers face a number of challenges that impede their effectiveness in agricultural production such as lack of capital, inadequate inputs and inadequate labour supply. This results in low agricultural productivity. The desire to address the plight of rural women farmers also motivates this study. Furthermore, very little information is known about Marange Irrigation Scheme hence this study will highlight this little known scheme.

1.5 Problem Statement, Research Questions, Aim and Objectives

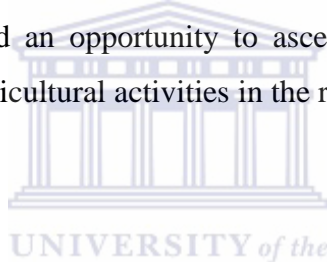
1.5.1 Problem Statement

As discussed earlier, there is widespread agreement among scholars in the agricultural field that women make considerable contribution to the agricultural sector (Ahmed *et al*, 2012; FAO, 2011; Goebel, 2005; Mehra & Rojas, 2008; World Bank, 2009). Women are the pillars of small scale farming and are the backbone of food security, especially in the rural areas.

Ahmed *et al* (2012) note that women's contribution to agricultural production outnumbered that of men as women contributed 67% of the total agricultural work and 65% to the monthly household income in Northern Kordofan State, Sudan. Several studies, however, indicate that despite playing a pivotal role in agriculture, women still remain marginalised and have minimal access to productive resources such as land, credit and extension services (FAO, 2011; Karl, 2009; Olawepo & Fatulu, 2012; Mudukuti & Miller, 2002).

FAO (2011:24) asserts that "Data on female farmers are limited". Mehra & Rojas (2008) also write that data are spotty on critical issues such as women's access to land, credit, participation in training and extension programmes and the degree to which women participate in agriculture. They assert that the available data is often overused. Solid research showing the degree to which women participate in agriculture seems to be lacking in Zimbabwe and in particular in Marange. This study, therefore, sought to investigate the nature and the extent of women's involvement in agricultural production at Marange Irrigation Scheme. This provided an opportunity to ascertain the prospects and problems facing women participating in agricultural activities in the research area.

1.5.2 Research Questions



This study sought to answer the following research questions:

- What are the determinants of women's participation in agricultural production in the study area?
- How do women participate in agricultural production at Marange Irrigation Scheme?
- What kinds of participation are there by women at Marange Irrigation Scheme, especially in decision-making processes?
- What are the opportunities and challenges confronting female farmers at Marange Irrigation Scheme?

1.5.3 Aim of the Research

The aim of this study was to investigate the nature and the extent of women's participation in agricultural production at Marange Irrigation Scheme.

1.5.4 Specific Objectives of the Study

- To identify factors that determines women’s participation in agricultural production at Marange Irrigation Scheme.
- To assess the level of women’s participation in various agricultural activities at Marange Irrigation Scheme.
- To determine women’s involvement in decision-making processes (passive or active participation).
- To establish the opportunities and challenges facing female farmers at Marange Irrigation Scheme.
- To provide relevant conclusions and recommendations to agricultural policy makers, NGOs and other interested stakeholders on possible ways of improving women’s participation in agriculture.

1.6 Research Design

Mouton and Marais (1990:193) define research design as “an exposition or plan of how the researcher decided to execute the formulated research problem”. Simply, it is a plan that guides the researcher on how to execute a particular study in order to answer research questions. In this study, the research design details the research methodology, the methods of data collection and data analysis procedures.

1.6.1 Research Methodology

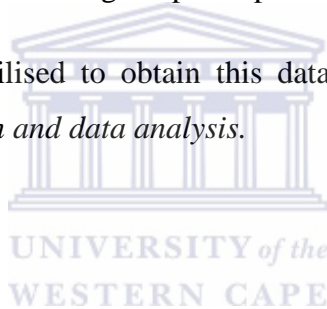
This study is a mixed methods research, combining both quantitative and qualitative methods of research “for the purposes of breadth and depth of understanding and corroboration” (Johnson *et al*, 2007 in Teddlie & Tashakkori, 2011:285). Each of these approaches has strengths and weaknesses hence a combination of the two methods will offer strengths that offset inherent weaknesses in each approach (Hammersley, 1996 in Teddlie & Tashakkori, 2011). This method also provides a better understanding of the phenomenon under study than either qualitative or quantitative methods alone.

Quantitative and qualitative approaches were employed in this study to collect numerical and non-numerical data respectively. While quantitative methods “allow for more breadth of information across a larger number of cases” (Krueger,1994:28) and the researcher is independent of what is being researched, qualitative approaches provide rich information from fewer cases and enable researchers to identify themselves with the participants in order to have a better understanding of their worldview (Babbie & Mouton, 2001).

1.6.2 Data Collection Tools

In the case of this study, collection of data focused mainly on the following areas: (a) identifying factors determining women’s participation in agricultural production (b) assessing the level of participation of women in various agricultural activities at the case study area (c) determining female farmers’ level of participation in decision-making processes and (d) establishing prospects and problems facing the participants.

The following methods were utilised to obtain this data: *questionnaires; semi-structured individual interviews; observation and data analysis.*



1.6.3 Questionnaires

Quantitative data was elicited through a well-designed questionnaire. Babbie (1992:147) states that a questionnaire is a “document containing questions and other types of items designed to solicit information appropriate to analysis”. Forty-eight self-administered questionnaires were distributed to female farmers through a random sampling method. Data collected included, the extent of women’s participation in various agricultural activities, women’s agricultural productivity, and women’s access to productive resources.

1.6.4 Semi-Structured Individual Interviews

Kelly (2006:297) indicates that interviews afford the researcher an opportunity to “get to know the people quite intimately, so that we can really understand how they think and feel”. A non-probability purposive sampling was employed to select the 14 participants. Babbie and Mouton (2001) write that a purposive sampling is used to select participants for a particular purpose and on knowledge of the population. Ten female farmers, two village leaders and two extension officers were interviewed using pre-formulated, open-ended questions to

gather information about the degree to which women participate in decision-making and capacity-building processes; prospects and challenges facing female farmers and sustainability of the irrigation scheme.

1.6.5 Observation

Mouton and Marais (1990:162) define observation as “a process by which researchers establish a link between *reality* and their theoretical assumptions”. The purpose of observation in this study was to gather non-verbalised data such as the physical, economic and social infrastructure of the area under study and the non-verbal ways of communication of the participants. This method gave the researcher a comprehensive understanding of the phenomenon under study. Data was gathered through transect walks, visiting the irrigation scheme and the fields, and observing participants throughout the research process.

1.6.6 Data Analysis

Durrheim (2006:52) notes that the purpose of data analysis is to “transform information (data) into an answer to the original research question”. Data can be analysed quantitatively or qualitatively. In this study, both methods of analysis were employed. Descriptive statistics such as percentages, mean, mode and Pearson Correlation tests were applied to analyse quantitative data. According to Babbie (1992), descriptive statistics is a “method that is used for presenting quantitative descriptions in a manageable way”. Quantitative data was coded, labelled, tabulated and analysed using ‘Stata’ version 12. This software is a valuable tool for analysing quantitative data because it can analyse datasets with many variables in a quick and simple way. Charts, tables and graphs were utilised to present the data.

Qualitative data was analysed using thematic analysis. Thematic analysis is a qualitative method for “identifying, analysing and reporting patterns (themes) within data” (Braun & Clarke, 2006:7). Data from personal interviews was coded and organised into different themes. Based on the aim of this study, a detailed analysis of each theme was presented.

1.7 Ethical Considerations

This study was undertaken after approval was granted by the University of the Western Cape Senate, the EMS Faculty Board and the Institute for Social Development. In this study, the

dignity and the welfare of all the participants were highly prioritised. Village leaders in Ngonya, Njerere, Shundure and Mwandambira villages, as well as the Councillor, were contacted before the commencement of the study requesting permission to conduct the study. The researcher was referred to Mutare Rural District Council where permission was granted (See ANNEXURE 6).

The aim and purpose of the research were conveyed to all the respondents to seek their permission to participate in the study. Participants took part in this study on a voluntary basis. No participants were deceived in any way in this study. Participants were informed that only pseudonyms would be used in the final report and in all published reports and they had the right to withdraw their participation at any stage of the study. All the research participants were treated fairly and equally during the entire research process and informed that no harm would befall them as a result of this study. The traditional practices and values of the four villages, Ngonya, Njerere, Shundure and Mwandambira were respected. All information gathered was treated with strict confidentiality.

1.8 Timeframe

The research was undertaken between August 2014 and April 2015.

1.9 Limitations of the Study

This research is not immune from challenges. These include the following:

Firstly, the questionnaire was in English and the challenge faced by the researcher was to translate data from English to Shona as Shona is the main spoken language in the case study area. It was difficult to find appropriate Shona equivalents for certain English terms, but nonetheless the majority of the participants understood English and answered questions satisfactorily.

Secondly, most of the farmers initially thought that the researcher was a donor who had come to donate farm inputs. A concentrated effort was made by the researcher to detail repeatedly the purpose of the research and to answer in an amicable way the myriads of questions posed by the farmers.

Thirdly, at the time the field research was conducted, the only female extension officer at Marange Irrigation Scheme was on leave and could not be contacted hence only male extension officers were interviewed.

Fourthly, it was difficult to locate some of the female farmers as some were in their fields and others had gone elsewhere. Nevertheless, the village leaders and the extension officers were very helpful in locating the participants of this study.

Despite the aforementioned challenges, the researcher is optimistic that this is a worthwhile research that will help to improve women's participation in agriculture and ameliorate their position in society.

1.10 Meaning of Basic Concepts

The following concepts are defined here in order to clarify their meaning in the context of this research. Other key terms related to the participatory development theory are highlighted and discussed in Chapter Two where the theory is fleshed out.

Agricultural Production: The term refers to both crop production and livestock production. In the context of this research, the term agricultural production is limited to crop production, the process of cultivating land, growing crops, harvesting crops and marketing produce.

Food Security: According to the United Nations Development Programme (UNDP) (1994:27), food security means that “all people at all times have both physical and economic access to basic food”. The 1996 World Food Summit stated that food security is a situation where “all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (International Fund for Agricultural Development (IFAD), 2012:1). In short, the term food security means the ability to access adequate food.

Irrigation: The term irrigation “refers to the artificial application of water to land for the purpose of enhancing plant production” (Van Averbeke *et al*, 2011:797).

Irrigation Scheme: An irrigation scheme is “an agricultural project involving multiple holdings that depend on a shared distribution system for access to irrigation water and, in some cases, on a shared water storage or diversion facility” (Van Averbeke *et al*, 2011:797).

Smallholder Irrigation Scheme: A smallholder irrigation scheme refers to an irrigation project that has farm sizes ranging from a fraction of a hectare to 10 hectares (Albinson & Perry, 2002).

Women: The Protocol to the African Charter on Human and People's Rights on the Rights of Women in Africa by the African Union (2003:4) defines women as "persons of female gender, including girls". Contextually, the term women refers to adult female persons.

Agricultural Extension: Davis (2009:1) defines agricultural extension as the "entire set of organisations that support people engaged in agricultural production and facilitate their effort to solve problems; link to markets and other players in the agricultural value chain; and obtain information, skills, and technologies to improve their livelihoods".

Extension Worker/Officer: An agricultural extension officer is the personnel "responsible for meeting the goals of extension system" (Khalil *et al*, 2008:369).

1.11 Research Agenda

This study is organised into five chapters.

Chapter One introduces the main subject of the study and highlights the background of the study, the problem statement, the research questions and the aim and objectives of the study. The chapter also discusses the research design and methodology of the study.

Chapter Two provides a comprehensive review of literature around the participation of women in agricultural activities. In reviewing the literature, the chapter discusses the conceptual and theoretical framework for the study – participatory development theory.

Chapter Three gives a detailed description of the case study area, Ngomasha community in Marange Communal Land. The physical and the socio-economic characteristics of the case study area are presented. The chapter also describes Marange Irrigation Scheme. It details the objectives of the irrigation scheme, the irrigation system and the irrigation method utilised at the scheme.

Chapter Four presents the research findings based on the research questions for assessing women's participation in agricultural production at Marange Irrigation Scheme. Charts, tables and graphs were utilised to present the data.

Chapter Five concludes the research undertaken to investigate the nature and the extent of women's participation in agricultural production at Marange Irrigation Scheme. Based on the research findings, the chapter offers recommendations and possible areas for further research.



CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

Following the end of World War Two, quite a number of approaches to the question of development and underdevelopment emerged in an endeavour to promote development in the Third World countries (Bernstein, 1973; Davids, 2009; Preston, 1996:25). Two major theories stood out until the late 1980s, namely *modernisation* and *dependency*. Although these theories presented different views about social transformation, they both prescribed macro-strategies to the problem of development and these were not in line with the societies' social, economic and political contexts (Davids, 2009). Consequently, these paradigms failed to bring about “sustainable development” in the less developed countries (Davids, 2009). A call for new development thinking was made. This saw the rise of *people-centred development*, also known as *participatory development theory*. This approach advocates a micro-strategy that puts people at the heart of development. The participation of all individuals – especially women, the deprived and the excluded – in the development process is stressed (Roodt, 2001).

The purpose of this chapter is to give a theoretical basis for this study and to present a review of literature related to the participation of women in agricultural production. The chapter begins by discussing the term *development* before giving a critical overview of traditional theories of development. Against this backdrop, the chapter discusses in detail the *participatory development theory*. It also outlines the limitations of participatory development theory. Having discussed the theoretical framework of this study, the chapter provides literature around the participation of women in agriculture. It then details the main obstacles to women's participation in agricultural activities. The last section briefly discusses the international, regional and national policies on women. A summary of the entire discussion concludes this chapter.

2.2 Conceptualising Development

Development is a complex term with several meanings and has been on the debating table for some time. According to Soriano (1986:185) development is a “process of movement, self-started and self-sustained, which seeks to achieve better living conditions – economic, social, cultural and political – through man’s socio-productive activity”. Sen (1999) sees development as the expansion of freedoms that people enjoy. Sen (1999:3) writes that “development requires the removal of major sources of unfreedom: poverty as well as tyranny, poor economic opportunities as well as systematic social deprivation, neglect of public facilities as well as intolerance or over activity of repressive states”. According to Sen (1999), growth of gross national product (GNP) and individual incomes are means to development but not development per se. This freedom depends on various factors such as having access to better education and health facilities and having the right to participate in all aspects of life. This concurs with the UNDP’s view on development.

The UNDP (1990:10) defines human development as “the process of enlarging of people’s choices”. These choices include political, economic and social freedom but, according to the UNDP, the most important ones are to lead a long and healthy life, to be knowledgeable and to have access to essential resources for a decent healthy living. The UNDP believes that development will help people to have these choices, hence development should centre on the people. The UNDP Human Development Report (1996) sees economic growth as a means to an end, development being the end.

Dauids (2005:23) states that though the development practitioners disagree about the meaning of development, it is generally agreed that “ultimately development is about people, their circumstances, their needs and their efforts”. In the context of this study, development should enhance the capacities of women so that they can actively and freely engage in socio-economic activities that better their lives.

2.3 Traditional Theories of Development

2.3.1 Modernisation Theory

The end of World War Two saw the rise of *modernisation theory*, firstly in the United States, later gaining popularity in first world countries during the 1950s and 1960s (Graaff, 2003).

According to Coetzee (2001:31), the term modernisation refers to “the total transformation that takes place when a traditional or pre-modern society changes to such an extent that new forms of technological, organisational or social characteristics appear”. The key proponents of modernisation theory, Walt Rostow and Talcott Parsons respectively adopted ideas of evolutionism and functionalism in explaining development in Third World countries (Pieterse, 2001; So 1990). Development was viewed as a linear process with distinct and definite conditions (Coetzee, 2001; Pieterse 2001; Rapley, 2002).

The central tenet of this theory was that Third World countries would only develop by following the western model of development. This involved replacing traditional values by establishing “democracy”, “industrialisation” and “secularisation” (Coetzee, 2000; So, 1990). Modernisation theorists regarded western values, norms and lifestyle as superior to all other cultures (Davids, 2009). Therefore, the western model of development was seen as the only sure path for social change. Modernisation researchers assumed that social change was “irreversible” and “progressive” (Graaff, 2003; So, 1990). They also argued for the eradication of communism as it was viewed as a hindrance to economic development (So, 1990). The neo-liberal principles of development advocated by the International Monetary fund (IMF) and the World Bank influenced modernisation theorists as well (Davids, 2009; Graaff, 2003). The IMF and the World Bank also prescribed a universal model of development for the developing nations. Of note was the idea that injecting aid into Third World countries would bring about development (Davids, 2009).

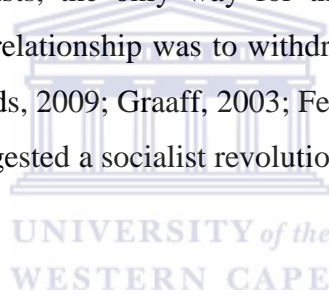
However, this theory was heavily criticised for failing to explain the widening disparity between the rich and the poor. It was also challenged for ignoring the impact of colonialism on developing countries (Davids, 2009). Modernisation theory was also undermined for equating development with westernisation and regarding traditionalism as archaic (Davids, 2009). By prescribing one formula of success, disregarding societies’ different circumstances, the modernisation theory dug its own grave.

2.3.2 Dependency Theory

The failure of modernisation theory to narrow the gap between developed and developing countries led to the rise of *dependency theory*. Dependency theorists sought to explain that slavery and colonialism restructured the Third World and led to the existence of two

interdependent regions: *the core* (dominant countries) and *the periphery* (dependent nations) (Graaff, 2003; So, 1990). Andre Gunder Frank, the foremost exponent of dependency theory, drew his ideas from the Economic Commission for Latin America (ECLA) structuralists who explained underdevelopment in South American countries as a result of unfair trade relations between the South and the North (Seers in Davids, 2009; So, 1990). Frank argued that capitalism in core countries actively underdeveloped poorer countries by exploiting cheap labour, food and raw materials of the periphery (Ferraro, 2008; Poulton, 2008). The advanced countries siphoned surplus from the Third World and enriched themselves (Davids, 2009). Peripheral countries were exploited through unequal trade; they exported cheaper raw materials and received more expensive manufactured goods (Graaff & Venter, 2001). This kind of exploitation developed the core; hence, Frank viewed development and underdevelopment as “two sides of the same coin” (Graaff & Venter, 2001:81).

According to dependency theorists, the only way for the periphery to develop and free themselves from this dependent relationship was to withdraw from the capitalist system and pursue a self-reliant model (Davids, 2009; Graaff, 2003; Ferraro, 2008; So, 1990). To achieve this, dependency researchers suggested a socialist revolution to break the chains of capitalism (Davids, 2009; Graaff, 2003).



However, while *dependency theory* offered an appealing explanation for underdevelopment, it failed to provide a concrete alternative paradigm for development. It was criticised for failing to explain the rise of East Asian *Tigers* such as South Korea, a Japanese colony, Taiwan and Singapore (Graaff, 2003). *Dependency theory* was also criticised for paying too much attention to external factors whilst ignoring internal factors such as civil wars and corruption that could also cause underdevelopment (Davids, 2009). Critics of *dependency theory* also argued that dissociation from the world market could hamper progress because most countries do not have the technology and industry to sustain themselves (Davids, 2009; Roxborough, 1979). Countries such as Zimbabwe and Cuba that have pursued the delinking strategy have not succeeded in bringing about development. Rather, pursuing such an approach has resulted in economic and social upheaval.

2.4. People-Centred Development/ Participatory Development

The aforementioned theories failed to explain and address development and underdevelopment and this made development theorists and practitioners call for change in

strategies. Development had to come from people themselves hence a people-centred approach, also known as *participatory development*, was advocated. The participation of all individuals – especially women, the deprived and the excluded – in the development process was stressed (Dinbabo, 2014; Roodt, 2001). It was argued that development in the peripheral would only be possible by “putting people first” (Chambers in Mohan, 2001:1). Various participatory methods such as Participatory Rural Appraisal (PRA) and Participatory Action Research (PAR) were then developed to bring about sustainable development, poverty reduction and social change in communities. Participatory development is a widely accepted method of development practice and is employed by various organisations to enhance the beneficiaries’ quality of life (Brett, 2003; Cornwall, 2003).

The central idea of *participatory development theory* is that people, the beneficiaries of development, have the potential to “shape their own life in cooperation and reciprocity with others, rather than being passively shaped or pushed around” (Swanepoel & De Beer, 2011:49). The beneficiaries are the primary role players in any project and should actively participate in all decision-making processes that affect their future, destiny and development (Theron & Caesar, 2008; Swanepoel & De Beer, 2011). Participatory development theorists assert that the beneficiaries of development have the right to define their own needs and aspirations and the will to reject any development initiative that does not address their welfare (Theron, 2009a). Participatory methods recognise an individual as being unique and able to make unique contributions to decision-making, hence seeking to involve all participants in the planning, implementation, monitoring and evaluation of development initiatives (Dinbabo, 2014; Mompoti & Prinsen, 2011). Participatory development uses a wide variety of visual and oral techniques to generate knowledge and to ensure the participation of all individuals, regardless of literacy levels in the development process (Kapoor, 2002). Proponents of this theory also promote local knowledge and stress that people should mobilise and manage their own resources and assets for the betterment of their lives. Participatory techniques seek to enhance the capabilities and self-esteem of the local people in development programmes (Brett, 2003; Dinbabo, 2003).

The key elements of participatory development theory include the following: *inclusion and equity; transparency; empowerment and sharing.*

Inclusion and Equity

All people should be actively involved in making decisions about development programmes that affect their lives. Laypeople – including women, the marginalised and underprivileged should be given “the opportunity to influence development initiatives in their communities,” (Davids, 2009:19).

Transparency

All people – including ordinary people affected by any programme as well as those wishing to participate – should have access to all relevant information. A climate conducive to open communication and dialogue should be created. Transparency will avoid any hidden agendas and suspicion among stakeholders (Swanepoel & De Beer, 2011).

Empowerment

All individuals in the community should participate in decision-making processes that affect their lives, in order to gain confidence, self-esteem, knowledge and new skills.

Sharing

Sharing of ideas among all stakeholders should be promoted. Community members should share their skills, knowledge and experiences amongst themselves as well as with the facilitators working with them, both internal and external.

Brett (2003) and Dinbabo (2014) states that participatory approaches have evidently enabled local people to have direct control over certain services, to influence decision-making processes and reduce poverty. Participatory techniques have helped to transform the social and technical conditions at Gal Oya, a major irrigation programme in Sri Lanka (Uphoff in Brett, 2003). De Beer & Swanepoel (1998) cite another example where the Department of Adult Education at the University of Ibadan employed participatory research techniques to attack poverty amongst the Apasan villages in the Oyo State of Nigeria. The participatory technique employed by the research team – which comprised local leaders, peasant farmers, teachers and local students – helped the villagers to realise the kind of problems that inhibited their progress and allowed them to formulate possible solutions to their problems. The local people also received non-formal education and were able to adapt their behaviour to fight poverty more effectively.

Participatory development also seeks to ensure the transformation of power relations, particularly gender power relations (Nawaz, 2013). It aims to bring about equitable development by challenging cultural barriers, in order to integrate gender in the development process (Dipholo, 2002). Women in many African countries are not allowed to speak or voice their opinions in public and have limited access to productive resources and services. Participatory approaches such as Participatory Rural Appraisal (PRA) and Participatory Action Research (PAR) aim to create space for the marginal voices to be heard and to give women the opportunity to influence development initiatives in their community (Cornwall, 2003). A participatory training programme implemented in Lira district of Uganda in 1997 focused on gender and the need to support female participation in local leadership (Akerkar, 2001). Small groups were formed including local councils, religious groups, women's groups and youth. Constraints and possible solutions for women's political participation were discussed. Tempelman (in Akerkar, 2001) noted that this training programme increased the number of female candidates and exceeded the criteria of one-third female representatives in local councils. The women candidates gained confidence and assertiveness and received support from their local leaders.

2.4.1 Conceptualising Participation

The term *participation*, however, has no one common definition. It is interpreted differently by different organisations and individuals. The World Bank (in Cooke & Kothari 2001:5) defines *participation* as “a process through which stakeholders influence and share control over development initiatives, decisions and resources that affect their lives”. Chambers (1995:30) says participation is used to describe an “empowering process which enables local people to do their own analysis, to take command, to gain in confidence, and to make their own decisions”. De Beer & Swanepoel (1998:24) define participation as a “collective activity in that a group of people sharing mutual interests, a sentiment or concern, act together and in concert”. They assert that this collective action will lead to minor successes that will boost the poor's confidence to tackle much bigger problems.

In the context of this study, participation refers to the ability of women to define and prioritise their challenges and actively engage in all activities and decision-making processes that enrich their lives. Most development theorists however, agree that participation is a “process by which people, especially the disadvantaged people, influence decisions that

affect them” though they disagree about how this influence should be applied and how strong it should be (Brett, 2003:5). Lack of a clear definition prompted scholars like Arnstein (1969) and Pretyy *et al* (in Theron, 2009b) to develop several typologies of the term participation. The *seven levels of participation* by Pretyy *et al* (in Theron, 2009b:116– 117) are discussed below.

2.4.2 Levels of Participation

Passive Participation

People are told what is going to happen or what has already happened. This is a top down approach and cannot be regarded as genuine participation. The people are mere recipients of what has been decided upon by outsiders (Pretyy *et al* in Theron, 2009b). This type of participation does not empower the people because the beneficiaries are not involved in making decisions that affect their own development. As noted by Mohan (2001), at times participation is used to gain legitimacy or as a rubber stamp to impress funders.

Participation in Information Giving

People answer questions posed in questionnaires, telephone interviews or similar such methods. People are not influential in the proceedings since the results of the research are neither disclosed to them nor checked for accuracy (Pretyy *et al* in Theron, 2009b). This type of participation is largely top-down since no platform for feedback or negotiation is given (Arnstein, 1969).

Participation by Consultation

People are asked by external agents to share their views on a particular subject, but they do not make decisions about their own development. Both the problems within the community and the solutions to these problems are defined by the external actors (Pretyy *et al* in Theron, 2009b). Development agents are not obliged to incorporate people’s ideas into planning processes. Arnstein (1969:219) calls this kind of participation “a sham” since no guarantee is given that citizen’s ideas and concerns will be taken into consideration.

Participation for Material Incentives

People participate by providing labour in return for food and cash. People actively take part in these programmes but, once the donor pulls out or the incentives are finished, the people also withdraw from the project and the project ends. (Pretyy *et al* in Theron, 2009b). This

kind of participation is quite common in rural areas where the poor are lured into participation in return for material incentives.

Functional Participation

People participate to meet predetermined project goals, especially to reduce costs. People are not involved in the planning of the activities and usually get involved after important decisions have been made (Pretyy *et al* in Theron, 2009b). This rung of the ladder is still superficial since people's views are not considered in the planning process.

Interactive Participation

This type of participation is viewed as a learning process whereby local people participate in the analysis and development of action plans. Participation is seen as an individual's democratic right and not as a way of achieving certain goals (Pretyy *et al* in Theron, 2009b). Communities take control over decisions. People gain a stake in maintaining structures and resources (Cornwall, 2008). This is an empowering type of participation hence its legitimacy. Empowerment, according to Swanepoel & De Beer (2011:52) is to "have decision-making power."

Self-Mobilisation

People organise themselves and take initiative, independent of external agents, to transform their community. The local people make contacts with development agents for resources, help and technical advice but determine how the resources should be used. Although people take control over the development process in their community, it is argued that this type of participation "may or may not" result in the redistribution of power and resources (Pretyy *et al* in Theron, 2009b:117).

2.4.3 Critique of Participatory Development Theory

Like any other theory, participatory development theory is not immune from criticism. Midgley (1986:33) notes that one of the barriers to true participation is finance. Local people usually do not have control over financial resources since they depend on external funds to meet their needs. Consequently, they are subject to external control. Mohan (2001) also notes that sometimes the term participation is used by organisations simply to gain legitimacy or funding. These organisations use it as a "rubber stamp" to impress funders that they are applying participatory approaches in their development programmes. Dipholo (2002) states

that the fact that organisations rely on external funding often means that they are more accountable to their funders than to the people they should help. They appear participatory yet they exclude those who should benefit from development programmes.

Cornwall (2008:279) states that it is not uncommon for external agents to carry out a participatory assessment of needs and priorities, but only respond to those that correspond with their agenda. This demotivates people from participation in development projects. People will assume that their priorities do not matter, unless it is clearly stated at the outset what the agency can and cannot do. Cornwall also points out that it is common for people to be involved in some decision-making processes while real decisions are made elsewhere. Furthermore, people may exclude themselves from participation due to “participation fatigue”. People may also exclude themselves if they see no change, especially after having been consulted many times. If they are asked to participate they will assume they are wasting their time again.

Brett (2003) argues that large external agencies, promoting participatory approaches to development, do not apply participatory principles to their activities. The participatory UNDP aid to Uganda did not benefit the most impoverished people and top-down approaches were employed. Aid was used for technical co-operation projects that did not apply participatory approaches though it was claimed participation was at the heart of its programme (Brett, 2003). The projects were undermined by opportunism and by corrupt leaders who took advantage of other members.

It is also argued that external agencies promoting participatory approaches pay lip service to the interests of the most marginalised section of the society that they claim to represent (Brett, 2003; Cornwall, 2008; Kapoor, 2002). Nawaz (2013) argues that although participatory development seeks to include gender, it has failed to some extent. Women are marginalised by the very programmes that are meant to empower and emancipate them. Cornwall (2003:1329) draws attention to the Joint Forest Management that was known for being participatory. Analysis of the Joint Forest Management conducted by feminist researchers revealed that the programme was “gender exclusionary and highly inequitable”. Cornwall (2003:1331) warns that participatory approaches may be “tokenistic rather than transformative”. It is against this background that this study sought to investigate the nature

and the extent of women's participation in agricultural production at Marange Irrigation Scheme.

Advocates of participatory development theory, nevertheless, assert that participation is transformative and can contribute to the achievement of empowerment, capacity building, sustainability, efficiency and effectiveness among other things (Sexana, 2011).

2.4.4 Key Participatory Development Concepts

Empowerment

Participatory development is seen as a site where empowerment will occur. Swanepoel & De Beer (2011) equate participation with empowerment. They state that empowerment does not only mean to acquire certain skills but “to have decision-making power” (Swanepoel & De Beer, 2011:52). A development practitioner can apply participatory approaches in order to involve all people in making decisions that affect their lives. These decisions help them to gain confidence, self-esteem and knowledge and to develop new skills. The more skills a person has, the more that person participates. Empowerment also enables the marginalised to make a difference in their communities and to voice their ideas. It can empower women, the poor and the oppressed to “influence development initiatives in their communities,” (Davids, 2009:19).

Capacity building

Davids (2009) defines capacity building as the ability of individuals to perform their responsibilities. Zadeh & Ahmad (2010:13) write “participation offers new opportunities, creative thinking and innovative planning”. Through applying participatory development theory, local people will be able to determine their own values, priorities and problems and act on their own decisions. Participation will therefore enable people to organise, plan, implement and evaluate their development activities.

Sustainability

Participatory approaches can promote sustainable development. De Beer & Swanepoel (2011:54) state that the accepted definition of sustainable development is that “it is development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. It is argued that participation helps communities to

sustain their projects because they have indigenous knowledge that helps them to sustain their environment (De Beer & Swanepoel, 2011). In the same manner they can use their expertise to cope with challenges.

Efficiency and effectiveness

Participation promotes efficiency, effectiveness and equity in the development process (Zadeh & Ahmad, 2010). It makes people manage their resources better and reduces the risk of project failure.

2.4.5 Operationalisation of Key Variables

In line with the conceptual and theoretical framework presented above, the following variables were used to assess the participation of women in agricultural production at Marange Irrigation scheme: *Level of participation; Agricultural productivity; Accessibility to productive resources and services; Empowerment and Capacity building; Sustainability and Self Reliance.*

Level of participation

This was measured by assessing the rate of women's involvement in farm decision-making; in various farm activities such as planting and harvesting; and in terms of time spent in agricultural activities per day in contrast to time spent in non- agricultural activities.

Agricultural productivity

This involved analysing the types of crops grown and the average crop production per season; farm assets owned by farmers; monthly farm income; as well as factors contributing to increased or decreased crop production.

Accessibility to Productive Resources and Services

This involved the analysis of land ownership; land size; capacity to finance inputs or obtain credit; availability and accessibility to markets; ability to attend agricultural training programmes and seek services from extension agents.

Empowerment and Capacity Building

This was measured by examining women's involvement in farm decision-making; farmers' capacity to articulate needs and express opinions; agricultural skills and new technology adopted by female farmers; and assets acquired from farm income.

Sustainability & Self Reliance

This involved assessing female farmers' ability to sustain the project and themselves with farm produce; their ability to cope with challenges; the profitability of agricultural production; as well as the capacity to purchase agricultural inputs for the next cropping season.

2.5 Empirical Studies on the Participation of Women in Agricultural Activities

Several researchers (for example, Damisa & Yohanna, 2007; Farid *et al*, 2009; Isa, 2009; Kalyani *et al* 2011; Madembwe & Madembwe, 2005; Mirtorabi *et al*, 2012; Sinyolo *et al*, 2014; Unnati *et al*, 2012) around the globe, conducted studies on the role women play in agriculture.

Mirtorabi *et al* (2012) conducted an applied research using a survey method to analyse factors influencing rural women's participation in food processing activities in Asara Karaj, Iran. Both descriptive and inferential statistics were employed to analyse data. The results of this study indicated that rural women's participation in processing activities depended on variables such as the level of education, family size, animal ownership, internal and using extension and education classes. The results also showed that there was a negative significant relationship between the level of education and rate of participation. Rural women with low level of literacy were more involved in food processing activities than women with higher levels of education.

Farid *et al* (2009) undertook a study in Bangladesh using quantitative methods to determine and describe the nature and the extent of rural women's participation in agricultural and non-agricultural activities. Their study found that poor rural women were the ones mostly involved in agricultural and non-agricultural activities. The results showed negative correlation between level of education and the rate of participation in agricultural activities. Those from affluent families spent more time in childcare and domestic activities. The poor participated in various activities in order to meet family needs and supplement family income.

A study conducted by Kalyani *et al* (2011) in India to determine tribal women's participation in agriculture also showed similar results. Tribal women's contribution to household income was higher than that of men. These women were of poor backgrounds and had limited access to resources needed for effective agricultural production but their overall rate of participation in agriculture was higher than that of men as they worked harder and for longer hours.

Unnati *et al* (2012), undertook a study to establish the extent of women's participation in farm decision-making in Renapur and Ausa Tahsils of Latur district, India. Utilising a multiple regression analysis, the study revealed that age, education and annual income were positively and significantly correlated to the participation of women in farm decision-making. Similar findings were also reported by Lad *et al* (2012) and Bhat *et al* (2012) who also conducted studies in India. The uneducated and the poor were the ones mostly involved in agriculture but barely involved in farm decision-making.

Rahman (2008) conducted a study in Northern and Southern Kaduna State in Nigeria to examine the status of women involved in agriculture. Data was analysed using descriptive statistics and the author employed a logit regression model to find out factors that satisfy women in agriculture. The main findings of this study were that the participation level of women farmers in farm decision-making was lower than that of men. Such findings are also supported by Damisa & Yohanna (2007) who also carried out a similar study in the same area. The authors further explain that some women could not purchase needed agricultural inputs or adopt new technologies because they did not have the power to make decisions without their husbands consent. On the contrary, Raidimi's (2014) study found that the majority of the women in six agricultural projects in Thulamela Municipality made farm decisions themselves.

Thagwana's (2009) study on the participation of women in agriculture at Tshiombo Irrigation Scheme in South Africa showed that women were the key players of agricultural production at the scheme. They engaged in farming in order to curb food insecurity. The study revealed that the main challenges facing women at the scheme were water shortages, time constraints and insufficient funds to finance inputs. Thagwana also reported that due to water shortages some women preferred to irrigate at night since at that time water was in abundance. However, this was difficult for women who feared to work at night. Some women had to hire men to irrigate for them and thereby spent their meagre farm income to pay the men.

Madembwe & Madembwe (2005) also carried out a study to examine women's access to land at the Ngondoma irrigation scheme, Zimbabwe. This study found that the women who had land, irrespective of size and who participated in agriculture contributed significantly to household food security, income and welfare. In this study, women had land registered in their own names as land was allocated only to the unemployed, of which women were the majority. However, having land rights did not give them the power to make farm decisions. Some women farmers reported that farm decisions such as marketing of produce were still made by men.

2.6 Main Obstacles to Women's Participation in Agricultural Activities

Various agricultural researchers (FAO, 2011; Ahmed et al, 2012; World Bank, 2009) argue that women's contribution to food production could have been higher if they had access to needed resources such as land, finance and technology. The following are the key obstacles that hinder women from active participation in agricultural production: *Access to land; Access to credit; Access to extension and Access to markets.*

2.6.1 Access to Land

Mehra & Rojas (2008) write that accessibility to land is one of the obstacles that women face. FAO (2011) states that even in countries such as Latin America where there is greater access to land, men have larger land holdings than women. Olawepo & Fatulu (2012) note that most married women gain access to land through their husbands. Those who cannot obtain land through their husbands can obtain land through a male relative such as father, uncle, brother or son. Olawepo & Fatulu's (2012:112) study showed that in Ekiti Kwara, Nigeria 66% of women held less than 1 hectare of farmland. Ayoande's (2011) study also showed that one of the main obstacles to women's participation in agricultural activities in Oyo state, Nigeria was lack of access to land. This is also further supported by Mehra & Rojas (2008:6) who state that in Cameroon, women provide more than 75% of agricultural labour yet they own just 10% of the land. Data from Nigeria and Gambia shows that women had lower yields than men due to the poor quality of their land. Mazhawidza and Mangengwa (2011) point out that, though the government of Zimbabwe has tried to address the plight of women regarding land access, there have been no clear measures to ensure that they are benefiting from the land

reform process. This is further supported by the ZIMSTAT (2013b) report which states that even after the land reform programme, men and women still do not have equal access to land.

2.6.2 Access to Credit

Women who do not own land have little access to credit which requires collateral such as ownership of land for one to obtain it. This results in low agricultural productivity since without credit women find it difficult to purchase essential resources such as seeds, tools and fertiliser (Mazhawidza & Mangengwa (2011). A study of credit schemes in Kenya, Malawi, Sierra Leone, Zambia and Zimbabwe established that women received less than 10% of the credit for smallholders and only 1% of total credit for agriculture (Mehra and Rojas, 2008). Isa (2012) investigated rural women access to agricultural credit and its effect on agricultural productivity. The author used a chi-square to test the null alternative hypotheses that there was no significant relationship between access to bank credit and increase in output and there was significant relationship between access to bank credit and output. The results of the study revealed that women had less access to formal loans. Credit facilities were inaccessible and administrative procedures were cumbersome. The majority of women in the study area obtained their loans from informal sources but the amount was insufficient. The chi-square analysis revealed that there was a significant correlation between credit and output. Women who received a substantial amount of credit also produced higher agricultural output.

2.6.3 Access to Extension

Some female farmers do not have the training, information and knowledge that is needed for effective food production. Mudukuti & Miller (2002) undertook a study to assess women's perceived obstacles to extension participation. Data collected from rural women in Shurugwi, Zimbabwe showed that the main barriers to extension participation were transportation, lack of information about extension programmes, heavy household workloads and time constraints. Ahmed *et al* (2012) also state that the higher illiteracy rates among women limit their ability to understand technical information and adopt new technologies aimed at increasing agricultural output and income growth.

2.6.4 Access to Markets

In sub-Saharan Africa, women market their produce mainly in local markets. Mehra & Rojas (2008) state that for female farmers to engage in marketing successfully, they should have the

capacity to participate knowledgeably and effectively. One of the challenges that rural women farmers face is to negotiate terms and prices with powerful buyers (Mehra & Rojas). Rural women farmers in Chirumanzu, Zimbabwe, revealed that accessing markets was difficult due to lack of reliable transport in the area (Kapungu, 2013). A large portion of their income paid for transport. Kapungu's study also revealed unavailability of information about prices especially in the informal market as another constraint. Female farmers preferred to sell their produce at informal markets because they accommodated all the different grades of the vegetables that the women produced. Women also faced immense competition from other farmers at the informal market and their prices were often lower than expected which further reduced their farm income. Female farmers also stated that another big hurdle was to get permission from their husbands to engage in marketing activities.

The aforementioned are the challenges that impede women from active participation in agricultural production. The following discussion shows that the governments of all nations, including Zimbabwe, have the obligation to address challenges faced by women in development and to ensure that all forms of discrimination against women are eliminated.

2.7. The Legal and Policy Framework for Women

The Women in Development (WID) policy that emerged in the 1970s as a result of the first world survey called on all development agencies to put the advancement of women on their agenda (United Nations (UN), 1995). The WID policy emphasised the importance of women in economic and social development and it stressed how women could contribute to the development process (ibid). The Millennium Development Goals (especially goal 3) call on all nations to promote gender equality and empower women. The following section briefly discusses the international, regional and national policies on gender.

2.7.1 International Policy Frameworks for Women

In 1981, the Convention on the Elimination of all forms of Discrimination against Women (CEDAW) that was adopted by the General Assembly of the United Nations on 18 December 1979 entered into force. The aim of the convention is to end discrimination against women in all areas of life. The convention obligates states to put in place measures that ensure equality between men and women in spheres of life. Article 2 of the CEDAW obliges State Parties to adopt apt legislative measures that prohibit all discrimination against women and amend or

get rid of existing discriminatory practices against women. Article 14 of the CEDAW provides that State Parties should consider challenges encountered by rural women and recognise the role they play to fend for their families. States also need to ensure that rural women participate in the planning and implementation of development programmes as well as benefit from rural development. In addition state parties have to ensure that women participate in all training and education programmes and benefit from all community and extension services to enhance their technical competency. Article 14 also obligates states to ensure women's participation in all community activities as well as ensure women's access to agricultural resources such as credit, marketing facilities, appropriate technology and land.

The Common Market for Eastern and Southern Africa (COMESA) gender policy (2002) also acknowledges that development in Africa requires the full participation of women in the development process as they make a considerable contribution. The COMESA policy aims to empower women. To achieve this, COMESA is committed to promoting gender equality in all the stages of development programmes and activities, from planning to evaluation. COMESA also aims to improve women's participation in agricultural development activities. Furthermore, it promotes training programmes for women and encourages women's participation in decision-making structures at all levels.

The Protocol to the African Charter on Human Rights and People's Rights on the Rights of Women in Africa calls on State parties to combat all forms of discrimination against women through appropriate legislative, institutional and other measures (African Union, 2003). Article 19 of the protocol obliges all State parties to ensure women's participation in all decision-making processes and to promote women's access to key agricultural productive resources. The Southern African Development Community (SADC) protocol on gender and development (2008) follows the guidelines and mandate provided in the aforementioned policies that promote gender equality. The protocol also calls on all member states to review or amend all discriminatory laws by 2015. Zimbabwe is one of the SADC member states and it also subscribes to various regional and international instruments on gender. As a signatory, it is also obliged to promote gender equality as the following discussion shows.

2.7.2 Policy Frameworks for Women in Zimbabwe

The 2013–2017 National Gender Policy (NGP) of Zimbabwe is the current national blueprint that seeks to establish a just society where both men and women participate in the development process on an equal platform. The goal of the NGP is to stamp out any form of discrimination or inequalities in all areas of life, as well as in the development arena. Participatory principles such as justice, equality, integration and inclusiveness underpin the NGP. The NGP (2013) recognises that Zimbabwe still lags behind in gender equality rankings. The policy reports that the 2011 Human Development Report puts the Gender Inequality Index in Zimbabwe at 0.583, further away from the target of zero. The policy therefore aims to ensure equal participation in formulating and implementing economic policies. It is also committed to ensuring equal access to productive resources and opportunities in all aspects of development. The policy promotes equal participation of men and women in ownership and decision-making structures. To achieve this, the policy proposes to “develop and strengthen policies, legal provisions and programmes, to ensure 50/50 representation of men and women in politics and other key decision-making positions” (NGP, 2013:15). The policy also pushes for the abolishment of all traditional and cultural practices that “inhibit equal participation of men and women in traditional governance and other grassroots structures,” (ibid).

The new constitution of Zimbabwe (2013) in sections 3(1) and 17(1) also stresses a firm commitment to gender equality. Section 17(1c) of the constitution spells out that the “State and all institutions and agencies of government at every level must take practical measures to ensure that women have access to resources, including land, on the basis with men” (Zimbabwe’s constitution, 2013). Section 80 specifically deals with the rights of women and it elaborates that every woman has full and equal dignity and rights as their male counterparts. In addition, it states that all laws, customs, traditions and cultural practices that go against the rights of women as stipulated by the constitution are invalid.

In the light of these policies, one can deduce that Zimbabwe is committed to ensuring gender equality in the development field. Zimbabwe established the Ministry of Women Affairs, Gender and Community Development in 2005 in an endeavour to promote gender equality and women empowerment. Zimbabwe has also put in place several measures to address gender inequalities such as the Affirmative Action. The government has also tried to address

gender issues using legislation such as the Matrimonial Causes Act (1987), Education Act (2004) and the Labour Act [28:10] (NGP, 2013). Though some significant progress have been made towards gender equality, much more needs to be done to bridge the gender parity gap (NGP, 2013). It is up to all institutions to act on policies that have been laid down so that gender equality becomes a reality in all spheres of life.

2.8 Conclusion

This chapter has presented the central tenets of traditional theories of development, modernisation and dependency. It was shown that these theories failed to explain development and underdevelopment and such a failure led to the rise of an alternative development paradigm known as *people-centred development* or *participatory development*. The chapter gave a detailed discussion on participatory development theory since it is the foundation upon which this study was undertaken. It was also highlighted that the beneficiaries of development should actively participate in all stages of development from initiation to evaluation as this can bring about empowerment, capacity building and sustainability.

The review of literature on the participation of women in agricultural activities revealed that poor and uneducated women are the ones who mostly engage in agriculture. Though they play such a crucial role in agriculture, they find it difficult to access the essential productive resources such as land, credit and extension. It was also shown that in some rural communities, female farmers' participation in decision-making was low. In such communities, men were the decision-makers.

This chapter has also shown that policies that promote women's participation in the sphere of development are readily available but as the research has shown, much more needs to be done to ensure that they are given the same opportunities as men. The following chapter presents a description of the case study area.

CHAPTER THREE

DESCRIPTION OF THE CASE STUDY AREA

3.1 Introduction

This chapter provides a detailed description of the Ngomasha community in Marange Communal Lands. The chapter begins by giving a brief overview of the Marange Communal Lands and then it details the physical, social and economic characteristics of Ngomasha community. The chapter also describes the Marange Irrigation Scheme in detail. It explores the background, the vision and the objectives of the project. The irrigation system and the method utilised at the scheme are described. The chapter ends by highlighting the role played by the local irrigation committee and the extension officers. In order to provide a clear picture of the case study area, maps, photos and satellite images were employed.

Most of the information contained in this chapter was provided by the Councillor of Ngomasha ward, the irrigation officials and the extension officers in charge of Marange Irrigation Scheme. In addition, the researcher conducted interviews (both formal and informal) with the female farmers and village leaders. Transect walks undertaken by the researcher also revealed a greater amount of detail about the physical, social and economic infrastructure of the area.

3.2 An Overview of the Case Study Area

Zimbabwe, a landlocked country, covers an area of 390 757 square kilometres (ZIMSTAT, 2013a). Much of the country is plateau with an altitude range from 197m to 2592m (Gambiza & Nyama, 2006). The climatic conditions are sub-tropical moderated by altitude (Muir-Leresche, 2006). Zimbabwe experiences hot, wet summers and cold, dry winters. The rains fall mainly in summer between November and March. Soil types vary but approximately 70% is sandy, derived from granite rock which is rich in minerals (ZIMSTAT, 2012a). Mining and Agriculture are the main economic drivers of the Zimbabwean economy.

Figure 2: Map of Zimbabwe Showing Location of Mutare



Source: Map taken from Centre for Disease Control and Prevention, wwwnc.cdc.gov/travel/destinations/traveller/none/Zimbabwe [accessed on the 13/10/2014].

Marange Irrigation Scheme is in Manicaland Province, under Mutare Rural District. The population size of Mutare Rural District was 125 547 males and 135 020 females, totalling 260 567 as at the last census of 2012 (ZIMSTAT, 2012b:15). The districts of Zimbabwe are divided into smaller administrative units called municipal wards. The Marange Irrigation Scheme falls under Ngomasha ward 12 of Marange Communal Land, commonly known as Bocha. Most of the communal lands in Zimbabwe lie in regions IV and V and are susceptible to drought. Meaningful crop production in these regions is difficult without irrigation, hence drought resistant crops such as sorghum and millet are usually grown (Muir-Leresche, 2006). Marange Irrigation Scheme falls in region IV.

According to ZIMSTAT (2013a), communal lands in Zimbabwe have the highest levels of poverty. Marange is known as the home of diamonds but is one of the poorest areas in Mutare District. Challenges that face many rural communities in Zimbabwe such as Marange include poor infrastructure, poor markets and unemployment. To uplift the Marange community, President Mugabe launched the Marange/Zimunya Community Share Ownership Trust (CSOT) in July 2012 that would enable communities to benefit from the exploitation of

diamonds within their areas. According to Maodza (2012), Community Share Ownership Trusts are a nationwide government initiative that are intended to bring about development and empowerment of rural communities by giving them 10% stake in all businesses that exploit natural resources in their areas.

3.3 The Study Area: The Ngomasha Community

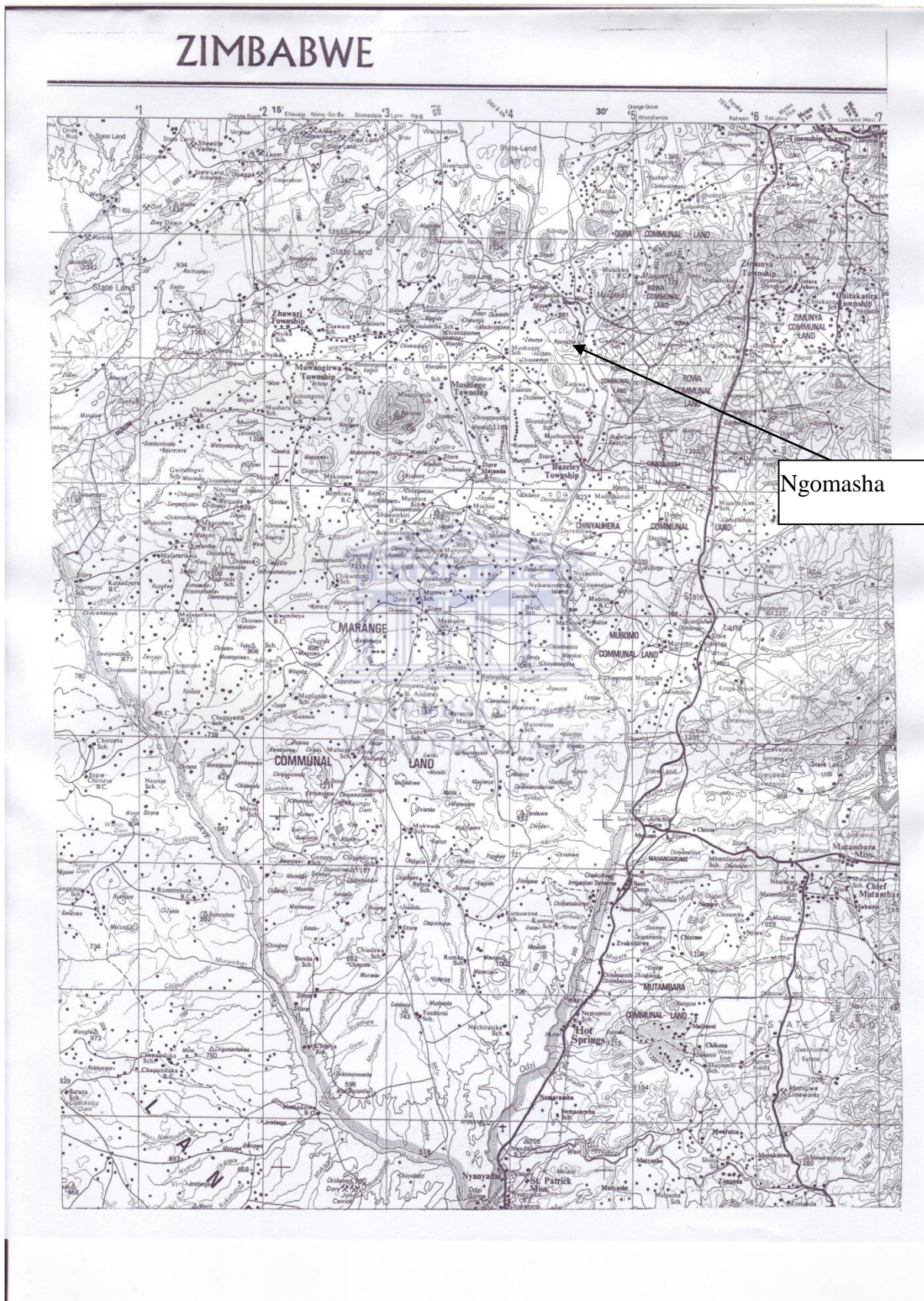
There are 12 villages in Ngomasha area, 4 under irrigation and 8 under dry land as shown in Table 2 below. The last census of 2012, showed that the population size of Ngomasha ward was 6592 of which 3064 were males and 3528 were females (ZIMSTAT, 2012b:20). The households totalled to 1469 (ibid).

Table 2: Villages in Ngomasha Ward

Villages Under Irrigation	Villages Under Dry Land
Ngonya	Dongire
Njerere	Hapanamambo
Shundure 3	Mudemo
Mwandiambira	Muchianga
	Shundure 1
	Shundure 2
	Chadambuka
	Ringai

Source: Fieldwork, 2014

Figure 3: Map Showing the Location of Ngomasha in Marange Communal Land

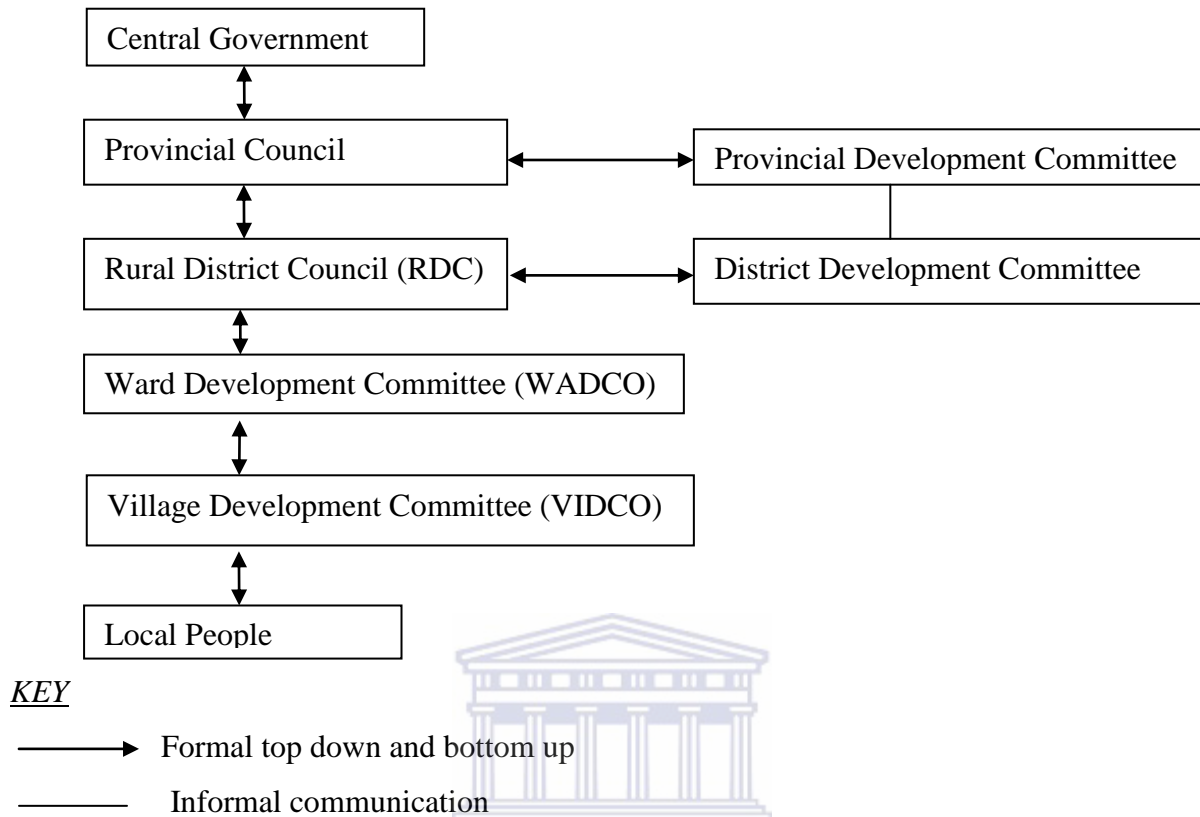


Source: Brinn, 1987

3.3.1 Local Government Structures

In 1984, after Zimbabwe gained its independence, local development committees in rural areas were established – Village Development Committee (VIDCO) and Ward Development committee (WADCO) (Katerere, 2001:123). Each village in Zimbabwe has a village assembly that is composed of all the adults in that community. The village assembly elects members of the VIDCO. The village head or *sabhuku* chairs both the village assembly and the VIDCO. According to the Traditional Leaders Act Chapter 29:17, the VIDCO and the village assembly identify their needs as well as review and approve any development plan before submitting it to WADCO. Each ward has a ward assembly that is made up of all the village heads and the ward councillor and is chaired by the headman. The ward assembly also reassesses the needs and development plans that come from villages, before forwarding them to the WADCO. According to the Rural District Councils Act Chapter 29:13, the councillor of the ward, chairs the WADCO that consists of the ward councillor, the village secretaries and the neighbourhood development committee. The Rural District Councils Act Chapter 29:13 articulates that the WADCO prepares and submits ward development plans to their respective rural district development committee before the 31st March of each year. The District Administrator oversees the whole district and reports to the Provincial Administrator who then reports to the Central Government. Figure 4 shows levels of authority in a rural community in Zimbabwe.

Figure 4: Local Government Structure in a Rural Zimbabwean Community



Source: Adapted from Mangiza (in Manhokwe, 2010:12)

It is also through the development committees that a two-way communication (as shown in Figure 4) between the local people and the government is ensured. In Ngomasha ward, village assemblies are conducted at least twice a month and ward assemblies once a month. Among other things, the interviewed village leaders stated that they ensured that all the people in the village had access to important information, residents paid hut taxes, vegetation was protected and village assemblies were conducted well.

3.3.2 Female Representation in Leadership Structures

Zimbabwe is a signatory to a number of regional and international conventions intended to promote the rights of women and ensure gender equality in all spheres of development. Article 12.1 of the SADC protocol on Gender and Development (2009:14), of which Zimbabwe is a party, “provides for equal representation of women in decision-making positions in the public and private domains by 2015”. As stated earlier, Zimbabwe has put in place policies such as the National Gender Policy and the Gender Affirmative Action to

advance gender equality. However, the ZIMSTAT (2013b:42) states that women are still marginally represented in decision-making structures and institutions that govern their lives. With respect to traditional leadership, in the year 2008, of the “268 chiefs and 474 headmen, only 5 and 4 were females, respectively” (ZIMSTAT, 2013b:42).

The VIDCOs and the WADCOs are the local leadership structures that facilitate community meetings and activities to ensure people’s participation in community affairs. The Traditional Leaders Act (29:17) section 22 clearly states that each village and ward should “ensure adequate representation of women, youth and any other interest group on the village and ward development committees”. On the contrary, Table 3 shows that at village level, women are marginally represented in development committees in Ngomasha community.

Table 3: Gender Representation in Leadership Structures

Development Committees	Males	Females
VIDCO (Ngonya)	4	2
VIDCO (Njerere)	4	2
VIDCO (Shundure)	4	2
VIDCO (Mwandiambira)	4	2
WADCO	3	4

Source: Fieldwork, 2014

The two females in each of the VIDCOs are secretaries and mere committee members. The chairpersons for the VIDCOs are not voted for since it is a post reserved for the traditional village leader or *sabhuku*. During the interviews, one participant revealed that the voting process was conducted by a show of hands and at times politically driven. War veterans – men and women who participated in the liberation war of Zimbabwe – were nominated for the top posts. Most of these were men. The feeling was that if they voted for any person other than the war veterans, they might be labelled as unpatriotic. Furthermore, some of the respondents stated that some women culturally believed that men should be selected for the top positions because they were the heads of the households. The WADCO has more females than men but this is explained by the fact that the WADCO is partly composed of village secretaries, most of whom are female. The councillor, the chairperson of Ngomasha WADCO, who is female, was voted through a secret ballot. One can therefore deduce that if

the voting system changes more women could take up leadership roles in Ngomasha community.

It is Mvududu (1994)'s view that having a man as chairperson does not necessarily mean that decisions are made by men but may just serve as spokesperson for the whole group. Nonetheless, Mohanty (in Cornwall 2003:1330) warns that installation of women on committees without a voice can be exploited to legitimise decisions made by the male members and "may perpetuate inequitable 'gender relations' between women." It is the researcher's view that a gender balanced committee would ensure that both men's and women's concerns, ideas and aspirations are tabled and a decision taken is not gender biased.

3.3.3 Communal Land

Communal lands were previously known as Tribal Trust Lands and were reserved for Africans during the colonial era. Mutema, (2003) states that 41% of the land in Zimbabwe is in communal lands and 74% of it is in Natural Regions IV and V. Land in these regions suffer from severe environmental degradation caused by overgrazing, deforestation, soil erosion and poor management practices. Communal lands in Zimbabwe are vested in the President of the state who has the authority to allow them to be occupied and utilised (Communal Land Act, 20:4).

According to Shivji (in Matondi & Dekker, 2011:2) communal lands are "lands that fall under the customary tenure system in that access thereto and the content of occupation rights are determined by customary law". Under the customary tenure system in Zimbabwe which is governed by Communal Land Act 20:4, the Rural District Councils (RDCs) were given the mandate to allocate land to the inhabitants of communal lands for occupancy and use. Historically, the chiefs had the supreme authority to allocate land within their jurisdiction but this responsibility was transferred to the RDCs after independence. According to Chitombe (2012), that has generated conflict between the RDCs and traditional leaders. Nevertheless, the RDCs liaise with traditional leaders when allocating land. Traditionally, land was only given to a male head in a household and women gained access through marriage (Mvududu, 1994).

During interviews with the village leaders, they stated that the irrigated plots at Marange Irrigation Scheme were allocated to people by AGRITEX officials and the village leaders. Only male heads of households were registered as the plot holders. The interviewed village leaders stated that in the event of death, the usufruct's rights were passed on to the surviving widow. It was gathered during the interviews, however, that the issue of land ownership is quite complex in communal areas. Currently, there are 210 plot holders at Marange Irrigation Scheme. Of these, 163 are males and only 47 are females. Mutema (2003:51) states that in communal areas if the landowner dies, the rights of inheritance are "based on primogeniture" although the wife of the deceased can continue to farm on that land. This means that a lineage male adult in a household takes over the ownership and a woman cannot own land in her own right under traditional culture. Nonetheless, communal land cannot be sold or used as collateral as the owners do not have title deeds to that land (ZIMSTAT, 2013a).

3.3.4 Climate

Marange Irrigation Scheme lies in natural region IV, which receives an average annual rainfall of between 450 and 600mm. Rainfall is the main determining factor of agricultural production in Zimbabwe. Rain falls mostly between October and March and this is the time when the dry land farmers engage in farming. Temperatures generally range between 20°C and 38°C.

3.3.5 Vegetation and Soil Type

Vegetation in Zimbabwe is according to soil characteristics and climatic conditions (Chitsike, 1988). The soils vary from less fertile sandy soils, which form 70% of the soils, to fertile clay igneous intrusion soils (Mufandaedza, 2002). As such, vegetation is also variable but tropical woodlands, savannahs, shrublands and grasslands are dominant. In Ngomasha, sand-loam soils dominate. These soils are highly leached and lack sufficient nutrients for successful production. Various types of vegetation are found including herbs and shrubs and indigenous trees such as *Musasa* and *Mutsvabvu*. The Ngomasha ward is also endowed with Mango trees (shown in Figure 5 below) that yield from December to February every year.

Figure 5: Mango Trees and Other Vegetation in Ngomasha Community



Source: Fieldwork, 2014

The ward councillor pointed out that due to population increase and overgrazing, some places were heavily deforested. The Ngomasha residents cut trees for firewood -their main source of energy - roofing and other purposes. This heavily depletes vegetation. The irrigation officials also stated that due to deforestation and land degradation, the irrigation canal system had been severely affected by soil erosion and siltation. Soil debris in the canal affects the rate at which water is discharged and often farmers in Mwandambira and Shundure villages experience water shortages. Every effort is being made, however, to reduce deforestation and restore the lost vegetation. According to the councillor, on tree planting day in 2013, the Ngomasha villagers planted 1000 trees at Shundure Secondary School. These included indigenous trees such as *Mukamba*, *Mutsvabvu* and *Musasa*, and exotic trees such as the Gum tree.

3.3.6 Social Characteristics

3.3.6.1 Education

Educational infrastructure development was highly prioritised by the government of Zimbabwe soon after independence. The number of primary and secondary schools as well as tertiary education facilities increased due to greater demand for education as primary school fees was scrapped, though reintroduced later in urban schools (ZIMSTAT, 2013a). Table 4

shows that in Ngomasha ward, there are four primary schools and only one secondary school which offers tuition up to Ordinary Level. This indicates that children who qualify for Advanced Level go to schools that are not within their proximity. Ordinary Level graduates have to seek advanced education in urban schools or boarding schools, if their parents can afford them. According to the councillor, a proposal was made to the RDC to have Advanced Level facilities at Shundure Secondary School. Apparently, a Science laboratory and a Geography room were being built at Shundure Secondary School. The councillor stated that in 2014 the ward received \$5 000 from the Marange/Zimunya Community Share Ownership Trust for development. The money was used to buy building materials for the Science laboratory.

Table 4: Schools in Ngomasha Ward

Name of School	Enrolment
Ngomasha Primary	223
Zarawa Primary	225
Shundure Primary	746
Mwadiambira Primary	640
Shundure Secondary	763

Source: Fieldwork, 2014

Although education has always been an integral part of the country, the ZIMSTAT (2013a:114) reports that the education sector has been constrained by “lack of adequate resources and a huge brain drain which occurred during economic crisis.” Rural schools in Zimbabwe, among other things, suffer from lack of books, learning materials, teaching materials, adequate classrooms and electricity (Mandina, 2012; Mufanechiya *et al*, 2012; Zvavahera 2015).

There is neither a college nor a university in Ngomasha ward or nearby communities. The closest colleges are in Mutare city, about 60km away. Infrastructure in schools is very poor. The schools are not electrified hence practical subjects such as computing and welding are not taught. During the interviews some of the respondents stated that they engaged in farming so that they could raise money to send their children to better resourced schools such as boarding or urban schools. Problems such as shortages of textbooks, dysfunctional libraries and school dropouts were raised.

The study area is the home of the Johanne Marange Apostolic Church that believes in polygamy and child marriages hence some girls are forced to drop out of school at a very tender age. Others drop schooling due to financial constraints or illness of parents or siblings, whom they must take care. Dakwa *et al*'s (2014) study also found that poverty, early marriages and early pregnancies were the causes for girl-child dropout from schools in Bikita, Zimbabwe. In addition, ZIMSTAT (2013a:110) states that poor households are “less likely to invest in their children’s education due to cost and time constraints.”

Figure 2: Zarawa Primary School



Source: Fieldwork, 2014

3.3.6.2 Health

Most of the rural dwellers in Zimbabwe seek medical care from public health facilities. A few seek medical help from traditional healers, or do not use health facilities at all (ZIMSTAT, 2013a). Reasons for not accessing a healthy facility could be affordability of treatment, distance to the health facility or religious beliefs (ZIMSTAT, 2013a). The most prevalent diseases in Ngomasha are malaria, bilharzia and HIV/AIDS. Malaria and bilharzia are the most commonly reported diseases because the area is a stone’s throw away from the Odzi River. The young ones usually go to the river to swim hence they easily contract bilharzia. Adults also go to the river to bathe and do their washing. The councillor stated that orphans and widows had increased in the area due to the HIV/AIDS pandemic. Despite this disturbing

situation, Ngomasha ward does not have a single health centre. In each village, however, there is one health worker who can only administer first aid. Residents, including pregnant women, walk long distances to other wards to access health care. The nearest health centres are Chiringaodzi and Mushunje clinics. It was reported that these clinics experienced drug and bed shortages and patients were often referred to Mutare General Hospital in the city. Ngonya villagers, for example, travel 8–10 kilometres to Chiringaodzi clinic, the nearest health centre.

Nevertheless, the Ngomasha area has a well-developed community herb garden that is exclusively for the HIV/AIDS patients. This garden significantly helps many patients who cannot afford the modern medicines that are also not readily available in the area. To ensure food availability and accessibility, the community also runs six food and nutrition vegetable gardens.

3.3.6.3 Animal Health

Livestock diseases such as tick-borne and gall-sickness are very common in the area. There are no veterinary services in Ngomasha. The nearest veterinary services are offered at Bazeley Bridge shopping centre, about 8–10 km away from Ngonya village. However, the ward has 3 dip tanks for livestock; one is exclusively for goats.

3.3.6.4 Water and Sanitation

According to ZIMSTAT (2013a), the wellbeing of an individual, especially their health status, depends on having access to clean drinking water and sanitation facilities. Cleaver (1993) also states that convenient, safe water supplies are of great importance to health and consequently agricultural productivity. Lack of access to such basic facilities is an indication of poor living conditions and also perpetuates poverty (ZIMSTAT, 2013a). The main sources of drinking water in rural areas are boreholes and protected or unprotected wells. 35% of rural dwellers depend on unsafe water supplies such as rivers, streams and dams (ZIMSTAT, 2013a:28).

There is an inadequate supply of clean water in Ngomasha. According to the councillor, there are only 12 functional boreholes and 9 non-functional boreholes. Shundure 3 and Dongire villages have no functional boreholes at all. This shows that many villagers have to access clean water elsewhere. The available boreholes are often overused and consequently break down easily.

According to ZIMSTAT (2012a:12), 39% of the rural households in Zimbabwe have no toilet facilities. Nearly every household in Ngomasha has a pit latrine except for a few who have to seek sanitary facilities from their neighbours or use the bush.

3.3.7 Economic Characteristics

3.3.7.1 Agriculture

Zimbabwe's rural economy largely thrives on agriculture. Agriculture provides food, employment and income to the rural dwellers. Increased agricultural production contributes to the reduction of food insecurity and poverty in rural communities (ZIMSTAT, 2013a). However, due to the prevalence of poverty in rural areas, rural communities lack key productive resources needed to engage in meaningful agricultural activities (ZIMSTAT 2013a:17).

Crop production and livestock production are the dominant sources of livelihood in Ngomasha. The main crops grown in this area are maize, groundnuts and beans. During the interviews the village leaders stated that women were the main food producers in the area. Rearing of cattle and goats is very common and having livestock in Zimbabwe is considered a sign of wealth. Cattle, for example, provide meat, milk, income, draught power and fertiliser supplement for many rural communities in Zimbabwe.

Subsistence farming is the main mode of production though. To a lesser extent, some residents sell some of their farm produce to meet household needs and earn income. Most of the participants stated that they sold their produce locally or to other surrounding villagers. However, the participants noted that, due to the volatile economic situation in Zimbabwe and the introduction of the multi-currency system, money was difficult to come by. Most farmers practised barter trading. The respondents asserted that villagers from dry land areas barter traded firewood, labour and clothes for food items such as maize, beans and wheat. The surrounding villagers rely on the irrigation scheme for grain since the dry land is susceptible to drought.

Another key business activity and source of income is mango selling, though this is only in summer. Most people sell their mangoes in Mutare city but at times buyers come to

Ngomasha with their own transport. One of the respondents stated that she derived money for school fees from the sale of mangoes every year. The Ngomasha villagers are also running three livestock production projects funded by the Land O Lakes Organisation. One group started with 375 meat goats and the group had over 1000 meat goats at the time of this study. The second group started with two pigs in 2012 and in 2014 had 15 pigs. The third group is also running a dairy goats project which began in 2013. The ward councillor stated that they were still looking for markets since they had only one buyer.

3.3.7.2 Business Centres

The government of Zimbabwe established growth points or rural service centres to ease rural-urban migration and reduce rural-urban disparities (Manyanhaire, 2011; Nhede, 2013). Growth points refer to “settlements which are earmarked or designated for economic and physical development” (Wekwete in Manyanhaire 2011:3). However, some of the centres have very weak infrastructure and are poorly serviced. These business centres have failed to bring about the much expected development in rural areas (Manyanhaire, 2011; Nhede, 2013).

The Ngomasha community does not have a functional business centre except for few small retail shops. Bazeley Bridge business centre, in another ward, is the nearest functional business facility. It is about 10km from where most of the Ngomasha people reside. Services at the business centre include a post office, a sub police station, a Grain Marketing Board (GMB), a clinic, butcheries, retail shops, a bottle store and a very small fuel station.

Walking past the GMB, the researcher observed that there were very few sacks of grain. According to the village leaders and extension officers, way back in the 1980s and 1990s, before the economic downturn, the Grain Marketing Board was the place where the Marange people and even people from faraway places would buy and sell their grain. Grain at the GMB was in abundance. During the interviews, the participants revealed that farmers no longer took produce to the GMB because they were not paid in time for them to buy farm inputs. Mutenga (2014) also reported that thousands of farmers’ union members had decided to sack GMB in favour of private buyers, for failing to pay them on time. Mzumara (2013), a Financial Gazette news reporter, quotes the vice president of the Zimbabwe Farmers’ Union, Berean Mukwende who said, “It is always unknown when the GMB will pay farmers for their

maize. Sometimes it takes years for the parastatal to pay”. The village leaders stated that agricultural yields in recent years had been lower than before and that had affected the GMB.

3.3.7.3 Roads and Communication

The World Economic Forum (2010) notes that network-based infrastructure such as transportation, telecommunication and electricity contribute to economic development and upliftment of the poor. A road runs alongside the Marange irrigation canal, as shown in Figure 8. However, this road is poorly maintained, as Figure 7 shows, and transport operators shun the area. Consequently, transport service is very poor in Ngomasha. Such a poor road network hampers the growth of agricultural productivity in the area.

Figure 3: A Section of Ngomasha Road



Source: Fieldwork, 2014

There is no electricity in the area but a few people have solar panels for lighting, powering basic gadgets such as radio and television and also recharging mobile phones. Communication is possible through mobile phones. According to Dash & Sahoo (2010), poor infrastructure in an area impedes sustainable growth and poverty reduction.

3.4 Description of Marange Irrigation Scheme

According to the information given by the AGRITEX official, Marange Irrigation Scheme covers 233 hectares (ha) and is divided into four blocks; A, B, C and D, having 43, 87, 58, and 45 hectares respectively, as presented in Table 5 below. Plot sizes range from 0.5ha to 2ha across the 4 blocks.

Table 5: Number of Plot Holders, Total Hectarage and Distance from the Weir of each Village/Block

Village	Block	Number of Plot Holders	Total Hectarage (233 ha)	Distance from Intake Weir/Water Source
Ngonya	A	45	43	1km
Njerere	B	78	87	10km
Shundure	C	47	58	12km
Mwandiambira	D	40	45	14.5km

Source: Fieldwork, 2014

Figure 4: Ngonya Village, the Canal and the Fields



Source: Google Earth, 2014

The main summer crops (October–March) grown at Marange Irrigation Scheme are maize, groundnuts and butternut while the main winter crops (April–September) are tomatoes, wheat

and beans. Table 6 shows the expected agricultural yields of the main crops per hectare, as given by the extension officers in charge of Marange Irrigation Scheme.

Table 6: Major Crops Grown at Marange Irrigation Scheme

Major Crops	Typical Agricultural Yields per Hectare
Maize	4–5 tonnes
Beans	2–3 tonnes
Tomatoes	25–30 tonnes
Groundnuts	2–3 tonnes

Source: Fieldwork, 2014

3.4.1 Background of Marange Irrigation Scheme

The irrigation scheme was commissioned by the Rhodesian government in February 1936. At the peak of the liberation war, however, around 1978, the irrigation scheme was abandoned and part of the canal was destroyed. Farmers could no longer use the irrigation canal and reverted to dry land farming.

In 2000, approximately 20 years after independence, the government rehabilitated the Marange Irrigation Scheme. The previous canal was not lined so the government decided to line the new canal with concrete and take the trapezoidal shape. Apparently, the lining of the canal is not yet finished due to lack of funds but farmers have been using both the lined and unlined sections of the canal for over ten years now. The canal is about 22km long.

The irrigation scheme is jointly managed by the farmers and the Departments of the Irrigation Development and AGRITEX in the Ministry of Agriculture, Mechanisation and Irrigation Development. For such a scheme, “the government is usually responsible for the head works (i.e., dam or weir, pumping station and conveyance system up to field edge), while farmers take responsibility for the infield infrastructure” (Mudima 2002:23). AGRITEX’s main task is to provide technical advice and extension services to the farmers.

Figure 5: The Lined and the Unlined Sections of the Main Canal



Source: Fieldwork, 2014

3.4.2 The Vision

The vision of the Marange Irrigation Scheme is to turn Marange Communal Land into a green belt and breadbasket of the district at large.

3.4.3 Objectives

The main objectives of the Marange Irrigation Scheme are the following:

- To enable crop production in Marange, a semi-arid area.
- To increase agricultural yields in the area in order to assure household food security.
- To unlock job opportunities and generate income.
- To reduce government drought relief inputs.
- To ensure continued supply of produce to the markets in order to improve cash flow of farmers.

Figure 6: Mwandambira Village, the Fields and Odzi River

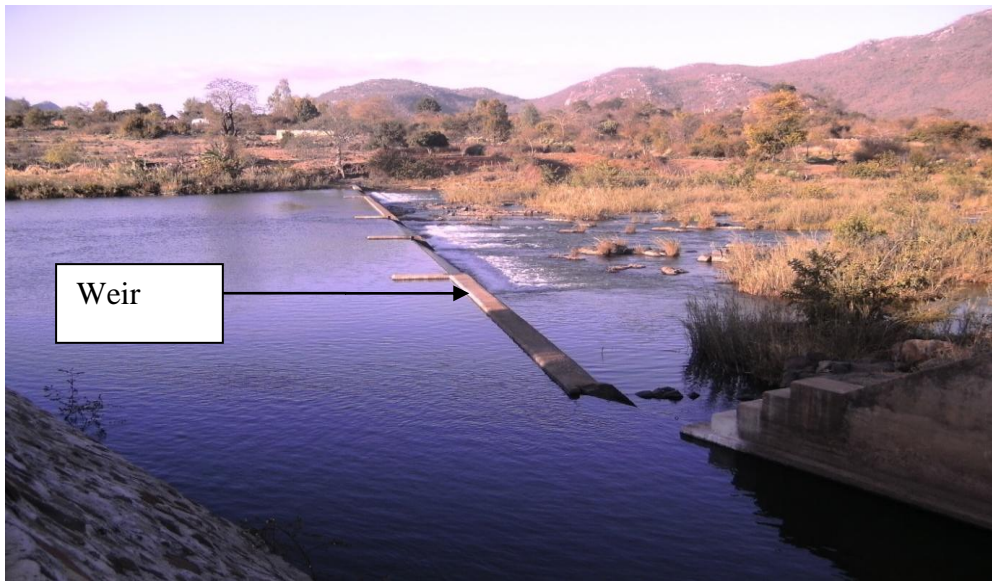


Source: Google Earth (2014)

3.4.4 The Irrigation System

Water is drawn from the Odzi River by means of a long weir that was built across the river to divide and divert water into the main canal, as shown in Figure 11. The main canal is 250mm wide by 1 metre high, and has 77 main canal gates. The canal gates measure and regulate the volume of water that is released into the field. According to Bosch *et al* (1993:3) a gated canal “enables the farmer to control the water flow”.

Figure 7: Intake Weir and Odzi River



Source: Fieldwork, 2014

From the main canal, water flows through the gated outlets into the secondary canal and then into the field/tertiary canals. According to Bosch *et al* (1993), the water level in the secondary canal determines to a large extent the amount of water that will be discharged into the field canal. In order to ensure a constant discharge of water into the canals, a duckbill weir, like the one shown in Figure 12, is utilised.

Figure 8: A Duckbill Weir



Source: Fieldwork, 2014

From the field canals, water is distributed to the crops in border strips that are separated by ridges, as shown in Figure 13 below. Michael (1978:586) states that in border irrigation each strip is irrigated independently by turning the water on in the upper end and turning it off a few minutes before it reaches the lower end, to reduce wastage and soil erosion. To ensure even distribution of water over the field, border strips should have uniformly graded slopes (FAO, 1985). This clearly shows a labour intensive type of irrigation.

Figure 9: Border Strips



Source: Fieldwork, 2014

In order to avoid unacceptable volumes of water, drop structures were included in the field canals, as shown in Figure 14. According to FAO (1985), drop structures take water abruptly from a higher section of the canal to a lower one.

Figure 10: Drop Structures



Source: Fieldwork, 2014

3.4.5 The Irrigation Method

Marange Irrigation Scheme practises flood irrigation using the newly introduced siphons. A siphon is “a length of piping used to move water over a high or low point where the water circulates as a result of the difference in pressure” (Dupriez & De Leener, 1992:264). However, farmers prefer the old system of watering crops where they use hoes or shovels to create openings into the sides of field canals to allow water into the fields and then close the openings again to stop the water flow. According to the irrigation officials, this old method of irrigation is time consuming, strenuous and results in uneven watering of the field - hence the introduction of siphon tubes which distribute water more evenly to the fields. In addition, water can easily be stopped from running, by simply pulling off the siphon tubes. However, the irrigation officers stated that farmers struggled to use this new technology because the fields were not designed for siphoning. One of the respondents also pointed out that farmers preferred the old system to siphoning because they were not trained to use siphon tubes for irrigation. For the farmers, using siphons is more taxing. Furthermore, all the interviewed farmers stated that they would prefer another type of irrigation because flood irrigation was time consuming and had detrimental effects on their health. The participants explained that they always stepped barefooted in the cold, muddy water when watering crops. Some reported having sore legs. This can impact negatively on agricultural production.

Figure 11: Surface Irrigation Using Siphon Tubes



Source: Fieldwork, 2014.

3.4.6 The Irrigation Timetable

Farmers in Shundure and Mwandiambira villages whose plots are far from the water source experience severe water shortages. As stated earlier, part of the canal is not lined and a significant amount of water is lost through sandy soil. Weeds also grow on the sides of the canal, as shown in Figure 9, and this reduces the flow rate and the capacity of the canal. In addition, soil debris that is deposited into the canal also affects the functioning of the canal. The irrigation officials also reported that the lined canal had a lot of leakages and a lot of water was wasted away. To ensure equitable distribution of water to all plots, farmers irrigate on different days, as shown in Table 7 below.

Table 7: Marange Irrigation Timetable

Day	Block
Monday	A
Tuesday	B
Wednesday	C
Thursday	D
Friday	D & C
Saturday	B & A
Sunday	A to D

Source: Fieldwork, 2014

3.4.7 The Irrigation Committee

Farmers themselves are responsible for the maintenance of the irrigation scheme. A steering committee comprising of 7 farmers (2 females and 5 males) was elected to coordinate all scheme activities such as repairing and maintaining the irrigation canal. This includes greasing the canal gates and removing weeds from the canals. If the canal is leaking, for example, the committee collects money from the farmers to buy cement to stop the leakage. It is also the steering committee's mandate to ensure that farmers stick to their irrigation timeslots. This is enforced by random inspections to see if there are any offenders. However, according to the extension workers, the by-laws regarding offenders were only on paper and hardly applied.

3.5 The Role of Agricultural Extension Officers

An agricultural extension personnel is an agent of transformation in the agricultural sector, aiming to boost production and reduce household poverty (Anaeto *et al*, 2012:182). The key role of the extension worker is to continually mould the farmer's farming habit in line with the latest proven technologies and to ensure greater productivity at reasonable costs (Anaeto *et al*, 2012:183).

The agricultural extension officers at Marange Irrigation Scheme work closely with the local leadership in the area to bring about agricultural development. There are 3 extension officers in charge of Marange Irrigation Scheme; 1 supervisor and 2 extension workers responsible for the 4 blocks. The gender distribution of extension workers is balanced, one male and one female. The extension supervisor has been working in the Marange since 1984, although he started as an extension worker. The main task of the supervisor is to ensure implementation of agricultural programmes and execution of project objectives. In addition, the supervisor backs up the extension workers.

During the interviews, the extension workers stated that it was their mandate to impart agricultural knowledge to the farmers and to disseminate agricultural information to farmers. Extensionists organise capacity building programmes for farmers, through which they train farmers in all agricultural activities such as land preparation, planting, water management, storage and marketing. A two year Master Farmer's course is also offered to farmers. According to the extension workers, classes for the course are conducted at least four times a

month. Extension workers also visit farmers on their fields and conduct demonstrations. However, the extension officers stated that training facilities were very poor. Training sites that were destroyed during the liberation war were never refurbished. Apparently, training is conducted at local schools in the area.

Monitoring and Evaluation of the project is also the mandate of the extension officers. Monitoring of the farm activities was conducted during the field visits. According to the UNDP (2009:8), monitoring is defined as “the ongoing process by which the stakeholders obtain regular feedback on the progress being made towards achieving their goals and objectives”. Evaluation of the project was carried out at the end of each season to determine whether the intended results were achieved. Evaluation is defined as “a rigorous and independent assessment of either completed or ongoing activities to determine the extent to which they are achieving stated objectives and contributing to decision making” (UNDP, 2009:8). The production evaluation indicators that were used by the extension officers included the following: *Number of farmers who have surplus grain; Number of farmers who need food aid; Number of farmers who sold their produce; Quantity of produce sold and profit made*. One of the extension officers disclosed that at times they obtained the above information from the Grain Marketing Board and did not involve the farmers in the evaluation of the project.

3.6 Conclusion

Providing a detailed description of the case study area, Ngomasha, was the purpose of this chapter. The chapter began by discussing the local organisational structure before detailing the social and economic characteristics of the area. It was shown in this chapter that women were underrepresented in decision-making structures in the four villages under the irrigation scheme and were chosen to take the position of a secretary or a mere committee member. Formal and informal interviews employed during the research process as well as observations during transect walks revealed that Ngomasha area was characterised by poor infrastructure.

This chapter also discussed the origin, the vision and the objectives of the irrigation project. The irrigation system and method were also explored. Extension officers offered technical and advisory services to farmers and evaluated the irrigation project. Capacity building programmes were organised by the extension officers to equip farmers with skills needed for

effective agricultural production. The following chapter will assess the nature and the extent to which women participate in agricultural activities at Marange Irrigation Scheme.



CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter presents and analyses the empirical findings of the data collected. Both quantitative and qualitative methods of inquiry were employed in this research to investigate the nature and the extent of women's participation in agricultural production at Marange Irrigation Scheme. The data collection tools used to solicit information from the participants were a well-designed questionnaire, semi-structured interviews and observation.

The data collected using questionnaires included the following (a) demographic information of the respondents, (b) the extent of women's participation in agricultural activities and (c) the level of women's participation in farm decision-making. Semi-structured interviews solicited information that included the following (a) the extent of women's participation in the decision-making processes (b) the extent of women's participation in extension programmes and (c) the prospects and problems facing female farmers. Observation provided comprehensive information of the phenomenon under study.

The findings of this study were analysed, discussed and presented thematically in this chapter. The chapter provides quantitative research findings, qualitative research findings and a chapter summary.

4.2 Quantitative Research Findings

Questionnaires were administered to 48 female irrigators who were randomly selected from the four villages of Ngonya, Njerere, Shundure and Mwandambira. Data obtained from the questionnaires was coded and analysed using 'Stata' version 12. Descriptive statistics such as percentages, mean, mode and Pearson Correlation tests were employed to analyse the results. Charts, tables and graphs were utilised to present the data.

4.2.1 Demographic Profile of the Respondents

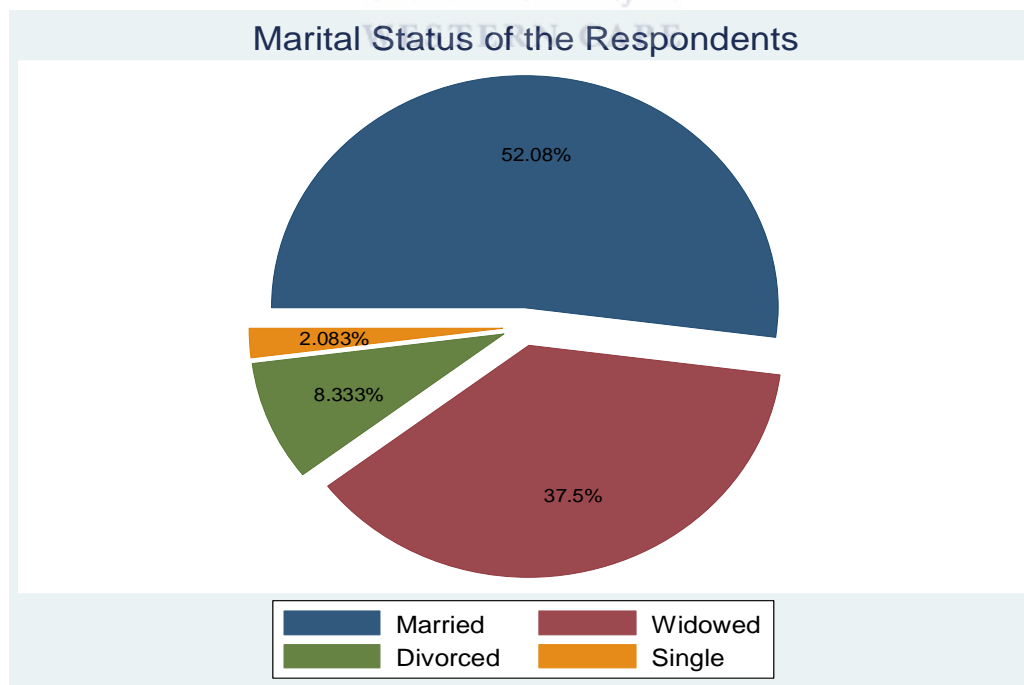
4.2.1.1 Age of the Respondents

The age distribution of 48 respondents in this study ranged from 20 to 72 and the mean age of the respondents was 44.6. This reveals that the majority of the participants in this study were middle aged who could actively and productively participate in economic activities. However, only 25% were below the age of 35 indicating that few young people engaged in agricultural activities. This could be attributed not only to rural-urban migration but also to the mass exodus of young Zimbabweans to neighbouring countries and abroad in search of greener pastures and better livelihoods.

4.2.1.2 Marital Status of the Respondents

As shown in Figure 16 below, the majority of the respondents (52.08 %) were married followed by 37.50% who were widows. 8.33% indicated that they had divorced and 2.08% were single. As alluded to earlier in Chapter Three, the Ngomasha community is characterised by poverty and high rates of HIV/AIDS. This could be the reason for the relatively large percentage of widows (37.5%) in this study.

Figure 12: Marital Status of the Respondents



Source: Author's Fieldwork, 2014

4.2.1.3 Household Head and Breadwinner of the Respondents

Most of the households from which the participants in this study came from were headed by men (59.57%). In this study, all the married females indicated that their households were male headed even though some of their husbands were working elsewhere. 40.43% were headed by the participants themselves who were either widows, divorced or single often referred to as *de-jure* female heads. According to ZIMSTAT (2013a), *de-jure* female heads are usually in a disadvantaged position as they do not receive remittances from spouses. 46.81% of the respondents were breadwinners who possibly depended largely on irrigation farming as it is the main source of income in the area. This result can mean that a large number of female farmers in this study fended for themselves, unless they had grown up children who brought in remittances.

4.2.1.4 Number of Dependents of the Respondents

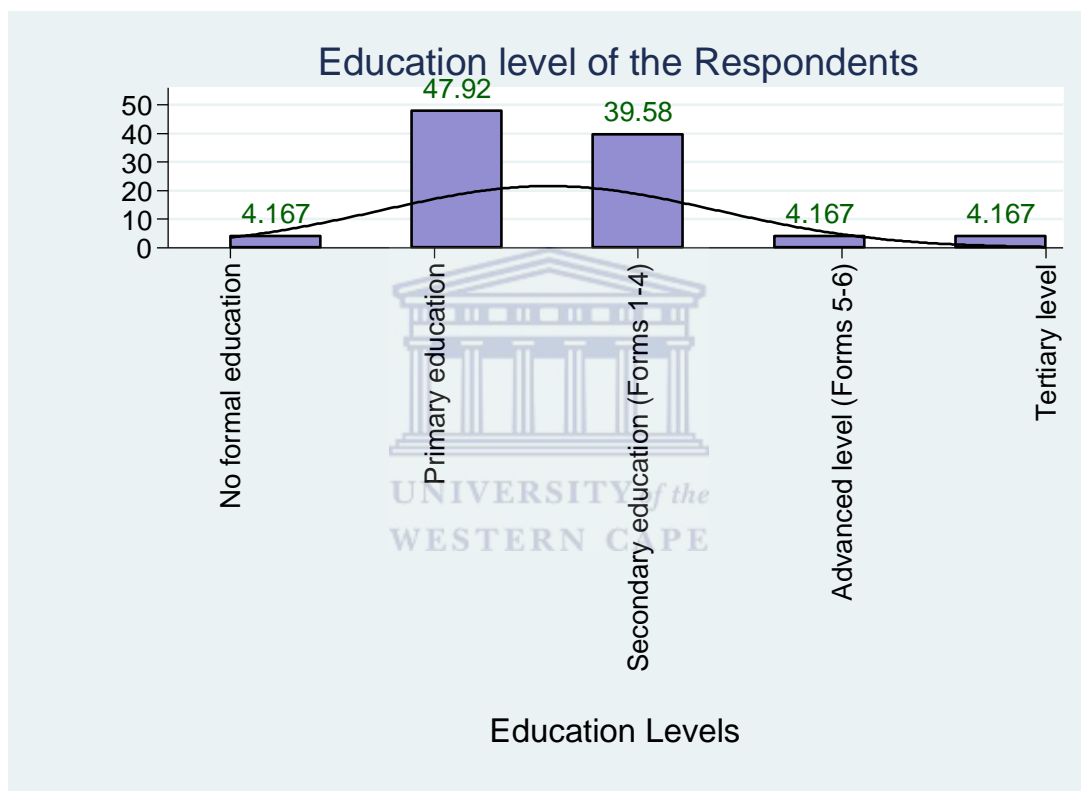
The majority of the respondents (34.78%) had 4 dependents followed by participants (17.39%) with more than 5 dependents. While this could mean that farm labour constraints were minimal for participants with dependents old enough to engage in farming, it could also entail greater financial obligations for the participants with large number of dependents. It is also possible that some of the participants' dependents were orphans whose parents might have succumbed to HIV/AIDS or malaria, the main killer diseases in the study area.

4.2.1.5 Level of Education of the Respondents

Education has been one of the most prioritised sectors in Zimbabwe since the dawn of independence (ZIMSTAT, 2013a). Figure 17 illustrates that of the 48 female respondents in this study, 4.17 % had no formal education while 47.92 % and 39.58% had some primary and secondary education respectively. In Zimbabwe, all people who are 15 years and above and have completed at least the first three years of primary school are deemed literate (ZIMSTAT, 2013b). In 2011, 97% of the population was literate (ZIMSTAT, 2013b:24). The results presented in Figure 17, therefore, show that most of the participants in this study were literate. However, with respect to advanced and tertiary education, only 4.17 % had reached those levels. It is evident that in this study very few respondents had high levels of literacy. This is in line with ZIMSTAT (2013b) that reports gender parity in primary and secondary education but gender disparities in tertiary education. Of the 7% who had tertiary education in 2011, only 2.9% were female (ZIMSTAT, 2013b:25), showing that fewer females in Zimbabwe have higher education levels. Traditionally, parents with limited resources would educate male children further than female children on the basis that girls would be given in

marriage and their husbands would provide for them. In addition, early pregnancy is one of the factors that can prevent girls from furthering their education. According to Sinyolo (2014:153), higher levels of education “implies more opportunities of generating income and, implies better understanding of new and improved farming technologies”. Due to low levels of education most rural dwellers are left with no option but to farm. However, Ahmed *et al* (2012) write that low education levels can hamper the ability to adopt better technology and technical information, which consequently affects participation in agricultural production.

Figure 13: Education Level of the Respondents



Source: Author’s Fieldwork, 2014

4.2.1.6 Household Monthly Income

Most of the rural dwellers in Zimbabwe depend on remittances brought by husbands or children working in urban areas or diaspora. As illustrated in Table 8, the majority of the respondents (37.5%) indicated that their total monthly household income was between \$101 and \$200 followed by 29.17% whose family income was less than \$50. Respondents who fall in the income bracket of \$50-\$100 and \$201-\$300 account for 10.42% and 18.75% respectively. Only 4.17% had a household monthly income of over \$400. This finding shows

that a considerable number of participants in this study were poor for they lived below the national total consumption poverty datum line of \$102.04 per person and \$510.00 for an average of five persons per household, as at February 2014 (ZIMSTAT, 2014).

Table 8: Household Monthly Income of the Respondents

Household Monthly Income	Frequency	Percent	Cum
<\$50	14	29.17	29.17
\$50– 100	5	10.42	39.58
\$101– 200	18	37.50	77.08
\$201– 300	9	18.75	95.83
\$401+	2	4.17	100.00
Total	48	100.00	

Source: Author’s Fieldwork, 2014



4.2.2 Women’s Access to Agricultural Productive Resources

4.2.2.1 Access to Land

Shumba (2011) writes that land is one of the key factors that determine the well-being of many rural dwellers in Zimbabwe. Of the 48 participants, only 17 were the plot holders and most of them were widows. When asked how they acquired the land, all the plot holders had gained access to land through inheritance or marriage. None of the participants had access to land in their own right. This is consistent with a variety of literature that states that in most African countries women acquire land through their husbands (Shumba, 2011; Olawepo, 2012). Land is one form of collateral needed to access credit but it is important to restate that the communal lands of Zimbabwe cannot be used as collateral as the owners only have usufruct rights. Communal land belongs to the government.

With respect to land size, the smallest plot was 0.2ha and the largest was 2ha. The average land size was 0.9ha and the modal land size was 0.5ha. 27 participants farmed on less than 1ha of land. Although female farmers depended on men for access to land, only 15 respondents indicated access to land as one of the key constraints they were facing.

4.2.2.2 Access to Extension Services

Access to extension services entails access to new technologies and higher agricultural yields (Sinyolo 2014). All the participants in this study (100%) indicated that extension services were available in their area. The participants stated that there were female extension officers in their area whom they could comfortably consult for agricultural advice. Training programmes for all farmers were organised frequently but the extensionists occasionally visited farmers on their plots. Virtually all the participants (95.83%) had attended at least one of the training programs. A few participants (35.56%) indicated that training sites were far away. It was evident that most of the female farmers at Marange Irrigation scheme had access to extension services.

4.2.2.3 Access to Credit

The majority of the participants (68.09%) indicated that they had never received credit for their farming activities. Of those who had accessed credit, 71.43% indicated that they had last accessed credit more than three years ago. Various reasons were given for not having access to credit but the majority (60.71%) indicated that they had no collateral needed to access credit. Some stated that they were not able to repay the loan and others were not aware of any credit facilities in the area. Apparently, farmers who stated that they had access to credit were not given financial assistance but loaned inputs such as seeds and fertiliser which they later returned in the form of grain. There was no credit facility in the study area. Olawepo (2012:115) writes that it is essential for farmers to have access to credit in order to improve their “capital base” for greater production.

4.2.2.4 Access to Farming Inputs – Seeds, Fertiliser and Pesticides

Various studies record that improving farmers’ access to farm inputs is critical to effective food production (Ahmed *et al*, 2012; FAO, 2011; ZIMSTAT, 2013). The majority of the respondents (89.36%) indicated that they had received some inputs such as seeds and fertiliser from the government and NGOs such as Plan International Zimbabwe but more than three years ago. Only 9.09% indicated that they had received inputs the previous season. The participants explained that inputs donated by NGOs were inadequate and could not be given to every farmer. The village leaders were left with no choice but to give to the neediest people. The government of Zimbabwe has also been giving inputs to farmers in the form of fertiliser, seeds and pesticides, in an endeavour to improve production. Two participants disclosed that such development efforts were at times marred by corruption and political interference and distribution of inputs was not conducted transparently. According to the

participants, occasionally inputs were distributed on a partisan basis, benefitting only the known ruling party members. This is collaborated by Tukuruku and Mabeza (2013) who write that reports of abuse of the inputs scheme were rife in Zimbabwe and the ruling party was accused of using the government input scheme to buy votes during election time. However, in the period of this study, the participants stated that the government had ceased to provide farming inputs to the farmers due to economic hardships facing the country. Mtimba's (2014) report that the government announced that it would stop issuing free inputs handouts to farmers confirms the participants' remarks. In addition, Cairns Foods Limited (Mutare) that used to supply inputs to farmers had closed down and farmers were feeling the pinch.

4.2.2.5 Ownership of Agricultural Assets

Table 9 illustrates that none of the respondents owned a tractor. 63.83% owned ploughs while 63.04% and 39.58% had wheelbarrows and scotchcarts respectively. Ploughs are used to till the land. Scotch carts and wheelbarrows are used to carry various things including farm inputs and farm outputs. All the participants in this study had hoes, the most basic asset for a farmer.

Table 9: Agricultural Assets of the Respondents

Type of Agricultural Asset	Percentage of Respondents
Tractor	0%
Scotchcart	39.58%
Wheelbarrow	63.04%
Plough	63.83%
Cattle	58.33%
Goats	81.75%

Source: Author's Fieldwork, 2014

Another key farm asset is livestock. Most of the participants (81.25%) owned goats which are relatively affordable for rural dwellers and 58.33% owned cattle. None of the participants had donkeys. Cattle and goats are important sources of food and income for rural dwellers and also provide manure, organic fertiliser. Ownership of livestock, especially cattle, in rural Zimbabwe signifies wealth and availability of draught animal power. Many of the respondents in this study (41.76%) had no animal draught power. Lack of draught power can negatively affect agricultural output due to increased workloads for farmers.

.2.3. Extent of Women's Participation in Agricultural Production

Various scholars in the agricultural field have documented that women play pivotal roles in agricultural production (Ahmed *et al*, 2012; Farid, *et al*, 2009; Dinbabo, 2014; FAO, 2011; Mehra & Rojas 2008). Women participate in varied farm activities such as planting, weeding, harvesting and storing but at varying degrees (Farid *et al*, 2009; Kaylani, 2011; Olawepo & Fatulu *et al*, 2012). The focus of this section is to discuss the degree to which women participate in various field operations.

4.2.3.1. Reasons for Engaging in Agricultural Activities

The participants gave various reasons for participating in agricultural activities. The need to produce food for household consumption ranked first followed by the need to earn income. Only 25 respondents indicated that they needed to supplement income. Other reasons that were given include improving their well-being, enhancing their economic status and fighting hunger. Only a few participants (39.13%) indicated that they engaged in other income generating activities, apart from farming. This shows that irrigation farming was the predominant economic activity in the area and the sole source of income for most of the respondents in this study. One can also interpret that due to low literacy levels, irrigation farming was the occupation that most of the respondents could engage in to earn a living.

4.2.3.2 Time Spent in Agricultural Activities

The participants were asked to indicate the amount of time they spent in agricultural activities per day. The majority (41.67%) indicated that they spent 7-8 hours followed by those (25%) who took 5–6 hours. A few participants, (4.17%) indicated that they took more than 9 hours farming. The participants were also asked to indicate the amount of time they spent in non-agricultural activities for comparison purposes. Most of the participants (60.87%) indicated that they took 3–4 hours. These results revealed that participants in this study spent more time in the field than in non-agricultural activities but in total their working hours were long. This is supported by Kalyani *et al* (2011) and Chancellor (1997) whose studies established that women's working days were long and hard.

4.2.3.3 Level of Women's Participation in Various Agricultural Activities

Table 10 illustrates that the rate of women's participation in agricultural activities was found to be high for most of the activities. Participation in weeding (86.96) ranked first, followed by planting (78.26%), harvesting (71.11%) and then land clearing (67.39%). Least participation was found in marketing, with the majority (60.9%) rating medium as their level of

participation. Factors such as transport problems, unavailability of cash and lack of a ready market in the area were cited as reasons for less participation in marketing. Participants were then asked to indicate their overall rate of participation in agricultural activities. 56.25% and 41.67% rated high and medium respectively. It is clear from this research that women were actively involved in most of the farm operations. This is consistent with Lad *et al* (2012) who write that women diligently participate in agricultural activities though their efforts are hardly recognised.

Table 10: Level of Women's Participation in Agricultural Activities

Agricultural Activities	Level of Participation		
	Low	Medium	High
Land Clearing	6.52%	26.09%	67.39%
Planting	2.17%	19.57%	78.26%
Weeding		13.04%	86.96%
Harvesting	8.89%	20%	71.11%
Marketing	24.39%	60.98%	14.63%

Source: Author's Fieldwork, 2014

4.2.3.4 Factors Determining Women's Level of Participation in Agricultural Activities.

In this study, Pearson's correlation test was employed to ascertain whether socio-economic variables – age, household income, level of education, number of dependents and land size – determine the level to which women participate in agricultural activities. The results of the correlation test shown in Table 11 reveal that there was a weak negative relationship between household income, education level and the level of women's participation in agricultural activities. This indicates that as the level of education and income increases, the level of participation decreases to a certain extent. These results are more or less in line with research done by Mirtorabi *et al* (2012). The results also showed that there were positive but weak correlations between age, plot size and level of women's participation in agricultural activities. This means that as the age and plot size increase, the level of participation also increases but to a very limited extent. The relationship between number of dependents and level of participation in agricultural activities was very weak, virtually no relationship. This shows that none of the socio-economic variables considered by the Pearson's correlation test were highly or significantly correlated with the level to which women participate in agricultural activities – at 0.01 level of significance. The results demonstrate that there could be other factors, not taken into account by correlation tests, which determine women's level

of participation in agricultural production. This is supported by Mirtorabi *et al.*, (2012:120) who state that research shows that participation depends on a number of factors including economic, motivated and personal variables.

Table 11: Correlation Between Socio-Economic Variables and Participation Level in Agricultural Activities

Independent Variables	Coefficient of Correlation
Age	0.1163
Education level	-0.2198
Household Monthly Income	-0.1264
Number of dependents	-0.0149
Land size	0.1121

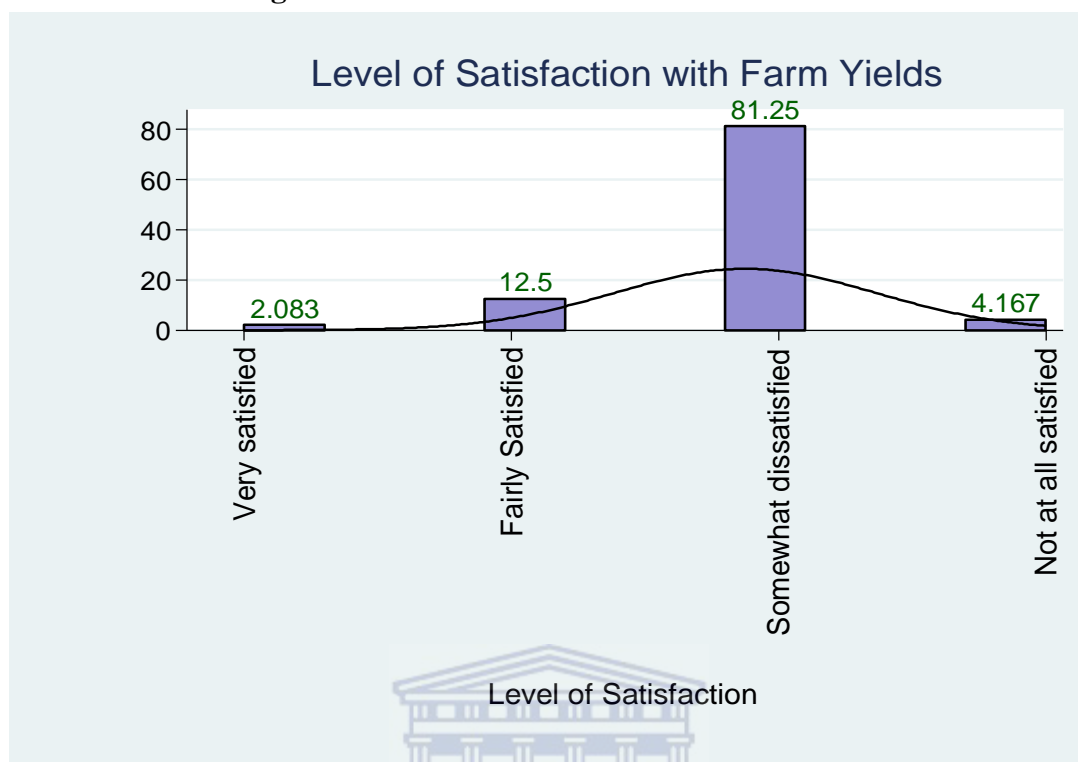
Source: Author’s Fieldwork, 2014

4.2.4 Women’s Agricultural Productivity at Marange Irrigation Scheme

4.2.4.1 Types of Crops Grown and Average Production per Season.

All the participants in this study grew maize and the crop recorded the highest yield. Maize is Zimbabwe’s staple food, hence its popularity. The maximum maize yield was 2 000 kilograms (kg) and the minimum yield was 100kg. The mean for the maize yield was 511.46kg. The second most popular crop was groundnuts which recorded a mean of 125.61kg followed by wheat, recording a mean of 285.29kg. The least popular crops were tomatoes and beans with mean yields of 322.8kg and 144.55kg respectively. When the participants were asked to rate their level of satisfaction with their agricultural yields, the majority (81.25%) rated somewhat dissatisfied, as shown in Figure 18 below.

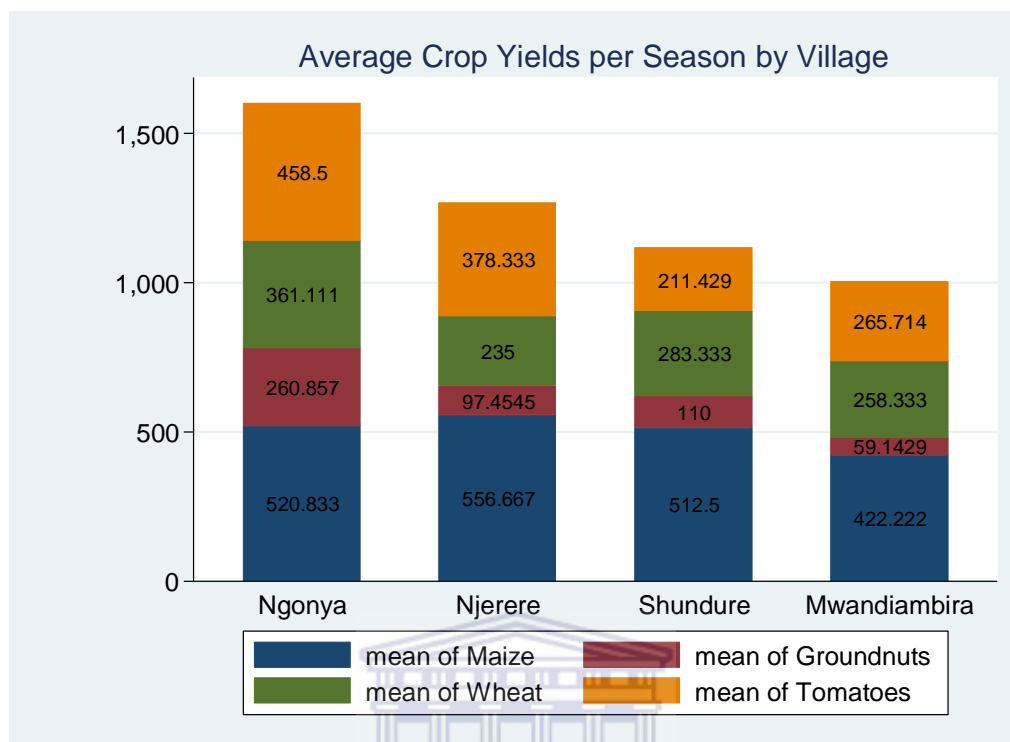
Figure 14: Level of Satisfaction with Farm Yields



Source: Author's Fieldwork, 2014

A comparison of the agricultural yields per village showed that participants from Mwandimbira village (Block D) had the lowest agricultural yields, as shown in Figure 19. As alluded to in Chapter Three, this could partly be attributed to the severe water shortages experienced by this block, since it is the furthest block from the water source. Participants from Nyonya village (Block A) had the highest agricultural yields followed by participants from Njerere (Block B) and then Shundure (Block C) villages. Farmers from Nyonya village stay close to the water source and hardly experience water shortages. These results seem to confirm that easy access to irrigated water is a key determinant factor of agricultural productivity.

Figure 15: Bar Graph Showing Average Crop Yields per Season by Village



Source: Author’s Fieldwork, 2014

The average crop yields indicated above are far below the expected yields indicated in Chapter Three. According to the respondents, agricultural production at Marange Irrigation Scheme was deteriorating. Some farmers left huge parts of their plots idle. Low agricultural productivity was attributed to a number of factors including lack of capital to acquire the needed farm inputs, market problems, water shortages, prevalence of pests, limited agricultural knowledge and labour constraints. This is consistent with Mutambara and Munodawafa (2014) whose research also revealed that smallholder irrigation schemes were characterised by low productivity due to financial constraints, lack of farm inputs and limited access to water.

4.2.4.2 Farm Income

As illustrated in Table 12 below, the majority of the respondents (69.77%) had very low farm incomes of less than \$50. 25.58% and 4.65% indicated that their farm incomes were \$50–100 and \$101–200 respectively.

Table 12: Farm Income

Farm Income	Frequency	Percent	Cum
< \$50	30	69.77%	67.77
\$50– 100	11	25.58%	95.35
\$101– 200	2	4.65%	100.00
Total	43	100.00	

Source: Author's Fieldwork, 2014

These results show that low incomes were derived from Marange Irrigation Scheme. Farmers mainly practised barter trading and subsistence farming. One can infer that due to low income levels, the sustainability of the irrigation project was in jeopardy. Farmers could not derive enough income to purchase farm inputs for better production.

4.2.5 Extent of Women's Participation in Farm Decision-Making at Household Level

Data presented in Table 13 shows that the level of decision-making for female farmers in farm activities such as usage of farm inputs, sowing and harvesting of crops was high. While 27 participants indicated a high level of decision-making with respect to sale of crops and usage of farm income, 11 participants did not complete these categories. This is possibly because they did not market their produce, either due to low agricultural productivity or lack of a ready market. None of the participants indicated low levels of participation in the usage of farm inputs and harvesting of crops. When asked to indicate their overall levels of participation in farm decision-making, 72.09% and 27.91% indicated a high and medium extent of participation in decision-making respectively. This is in accordance with Raidimi's (2014) study that established that the majority of women in six agricultural projects in Thulamela Municipality had the liberty to make farm decisions themselves.

Table 13: Level of Participation in Farm Decision-Making

Agricultural Activities	Level of Participation		
	Low	Medium	High
Usage of Farm Inputs		31.91%	68.09%
Sowing Time	2.44%	14.63%	82.93%
Harvesting Time		21.74%	78.26%
Sale of Crops	9.76%	24.39%	65.85%
Usage of Farm Income	7.69%	23.08%	69.23%

Source: Author's Fieldwork, 2014

The level to which women participated in farm decision-making at household level depended on various factors. A substantial number of participants in this study were the heads of their households and this could explain the high level of participation in farm decision-making. Nevertheless, some of the participants expressed that participation in agricultural activities had improved their socio-economic status and were able to make independent farm decisions. This is supported by Zadeh and Ahmad (2010) who state that participation increases confidence and self-esteem and consequently energises people to make and implement their own decisions. In addition, one of the participants stated that her husband, a pensioner, had no interest in farming and she was the one who made all farm decisions. During the research, very few men were seen in the fields; some were seen drinking beer at the retail shops in the area. It could be deduced that those participants whose husbands had no interest in farming or had off-farm income made farm decisions themselves.

Pearson correlation tests were also conducted to ascertain if there was an association between age, education level, farm income and the level to which female irrigators participate in decision-making at household level. The correlation coefficient of 0.3349, shown in Table 14, demonstrates that there was a moderately weak positive relationship between age and the level of women's participation in farm decision-making. This means that as age increases the level of women's participation in farm decision-making also increases to a certain extent. Analysis of the results also indicated that there were very weak negative correlations, virtually no relationship, between the participants' education level (-0.1583), monthly farm income (-0.0155) and the extent of women's participation in farm decision-making. As the education level and farm income increase, the level of women's participation in farm

decision-making decreases, but to a very small extent. These results reveal that none of the variables (age, education level and farm income) were strongly associated with the level of women’s participation in farm decision-making.

Table 14: Correlation Between Independent Variable and Participation Level in Farm Decision-Making

Independent Variables	Coefficient of Correlation
Age	0.3349
Education level	-0.1583
Farm Monthly Income	-0.0155

Source: Author’s Fieldwork, 2014

4.3 Qualitative Fieldwork Data

Qualitative analysis was carried out to further explore the nature and the extent to which women participate in agricultural production. Using a purposive sampling method, 14 participants were selected to provide qualitative data. Semi-structured individual interviews were conducted with two village leaders, two extension officers and ten female farmers. Data from personal interviews was analysed using thematic analysis. It is important to reiterate that all participants are referred to by pseudonyms to respect their confidentiality.

4.3.1 Women’s Participation in the Irrigation Project

Proponents of participatory development theory believe that the beneficiaries of development have the potential to “shape their own life in cooperation and reciprocity with others, rather than being passively shaped or pushed around” (Swanepoel & De Beer, 2011:49). Participation seeks to give the marginalised, such as women, the opportunity to influence development initiatives in their communities (Dinbabo, 2014; Davids *et al*, 2009; Cornwall, 2003). It seeks to involve all the participants in the planning, implementation, monitoring and evaluation of development initiatives (Mompoti & Prinsen, 2011). The Rio Declaration on Environment and Development 1992, principle 20, articulates that the full participation of women is key to the achievement of sustainable development (UN, 1992).

The Marange Irrigation Scheme was established in 1936 when communication between the government and the people was largely top-down. All the participants including the village leaders stated that the irrigation project was not their idea. It was initiated and planned by the

government who sourced labour from the local people at the implementation stage. According to the village leaders, the local people were incorporated mainly to dig the irrigation canal and none of the local people were involved in making decisions regarding the irrigation project. All the female respondents confirmed the reports by the village leaders. The irrigation scheme was destroyed and abandoned during the liberation war, only to be resuscitated in year 2000 by the government.

With respect to the rehabilitation of the irrigation scheme, the interviewed female farmers were consulted by the village leaders on the need to revamp the irrigation scheme before the proposal was submitted to the RDC. Having secured some funding, the government informed the people through the village leaders that the proposal had been approved and the irrigation canal would be rehabilitated. However, none of the interviewed participants were involved in planning and designing the refurbishment of the irrigation scheme. Most of the participants including the village leaders lamented that the new canal was narrower and shallower than the old canal and as a result they experienced water shortages. According to the participants, even though the old canal was not lined, it was “wider and deeper” and carried vast amounts of water. One participant stated that they got involved in the irrigation project just after the irrigation canal had been established.

The interviewed female respondents felt that they had limited influence over irrigation development programmes because key decisions were made by the government or the implementing agencies. The participants stated that they often took part in identifying their needs but did not make the “*final decisions.*” One interviewee said the following, “*The donors come with their own programme and introduce the programme to the people. They inform us of what they are going to do and then give everyone the opportunity to ask questions.*” The ward councillor explained that all development projects had to be endorsed by the District Administrator who granted non-governmental organisations (NGO) or development agencies the permission to operate in the community. Having been granted approval, development agents then informed the councillor, the VIDCO and then the people.

It was evident from the interviews that the beneficiaries of the project were passive recipients of what the development agents had decided upon. The female farmers were not involved at every phase of the irrigation project. Although the beneficiaries were given the space to identify their needs, ask questions and air their views, they were side-lined in making the

final decisions regarding their own development. Cornwall (2008) rightly pointed out that it is common for people to be involved in the decision-making processes while real decisions are made elsewhere. A top-down approach to development is still dominant. This is contrary to the participatory development theory that advocates the involvement of all beneficiaries of development in *all* decision-making processes that affect their future.

4.3.2 Women's Participation in Public Participatory Structures

Chambers (1995:30) says participation is used to describe an “empowering process which enables local people to do their own analysis, to take command, to gain in confidence, and to make their own decisions”. Participation aims to create space for the marginal voices to be heard (Cornwall, 2003).

Semi-structured interviews with the female participants revealed that village meetings/assemblies were conducted at least once a month. Village assemblies are the spaces created for all rural communities to participate in decision-making processes – to discuss, debate and deliberate on various issues concerning the community. Such spaces serve to promote the empowerment of the less privileged people of the society such as the poor, women and the elderly. Swanepoel & De Beer (2011:52) equate participation with empowerment, stating that empowerment is “to have decision-making power.” All the female farmers stated that they were informed beforehand of meetings through ‘letters’ that were sent to each household by the secretary. When asked whether they attended meetings, most of the female respondents replied that they frequently attended meetings. Two participants stated that they had other personal engagements to attend to such as house chores, looking after children and farm work.

Nonetheless, all the female farmers commented that meetings were mostly conducted in a free and conducive environment. Women freely aired their views during meetings. When asked whether they participated in decision-making, most of the interviewed female farmers answered that they often took part in community decision-making processes. According to the participants, the village leaders often told them that everyone had the right to participate in decision-making and express their views during meetings. One interview participant clearly said, “*Men's perceptions about women making decisions in the public forum have now changed; men now listen to women. I participate during the meetings and give my view.*”

On the contrary, one interviewee said that she hardly participated in the public forum because men viewed women's contributions as of less value. At village level, village development committees are the key decision-makers but consult community members on important development matters. It is important to rehash that women were marginally represented in village development committees and did not hold influential roles. The village leaders who spearheaded village meetings at Marange Irrigation Scheme were all male. This is quite typical of a patriarchal society and could be the reason why one of the participants felt that women were not listened to. Most of the female farmers, however, did not complain or show any concern that few females were in leadership. The majority confidently expressed that they voiced their ideas during meetings and their views were taken into consideration if they contributed meaningfully to the group discussions.

Semi-structured interviews were conducted with the village leaders to ascertain the level to which women participate in public meetings. All the village leaders reported that women dominated the public meetings as most men were working elsewhere. The leaders asserted that women were given the platform to air their views and most of them actively engaged in the decision-making space. According to the village leaders, women's ideas were welcomed and taken seriously. Factors that inhibited some women from participating in public participatory processes were lack of confidence and inferiority complex. One can therefore conclude that at village level, most women freely and actively engaged in making community decisions except for a few who felt incompetent or inadequate to share their ideas in the public domain.

4.3.3 Women's Participation in Community Projects

When asked whether women took part in community projects, all the village leaders testified that women were the ones who largely participated in community activities such as repairing and cleaning the irrigation canal. However, one of the village leaders, Sabhuku Chaka, revealed that *"a large number of people participated in development projects if incentives were involved."* The researcher heard such a sentiment several times during the field research. One of the female respondents also disclosed that *"Food for Work Programmes were commonly used by village leaders to attract people to work on projects such as repairing the*

canal or the road.” This type of participation is not ideal because once the incentives are pulled out, the project collapses.

Nevertheless, one of the female participants, reported that community initiatives such as mushroom and garden projects were largely driven by women. According to the respondent, committees of such projects were mostly dominated and chaired by women. Unreliable transport services and lack of resources were cited as some of main factors constraining community driven projects. This seems to support Cohen and Norman (2011) who report that participation in some communities can be difficult due to inadequate infrastructure.

4.3.4 Participation of Women in Extension Programmes

Semi-structured interviews with the female famers revealed that extension programmes were conducted at least twice a month. Only two of the ten interviewed female farmers attended extension programmes regularly and had attained Master Farmer Certificates. These respondents testified that extension classes were very useful and equipped them with a wide range of agricultural skills including crop management, crop rotation, using water effectively and efficiently, planting crops in an even and well-spaced manner and marketing produce. In addition, the participants also mentioned that they shared ideas, skills, their successes and failures during the training. According to the participants, application of gained knowledge helped them to improve the quality and quantity of crops. The female farmers appreciated the work done by extension workers but expressed that they needed more training to enhance their farming skills and that more field demonstrations should be organised. One of the village leaders, Sabhuku Ngoma also reported that “*field demonstrations and follow ups after training were lacking.*” Farmers preferred practical training to theory. This is not surprising since most of the participants in this study had very low literacy levels. It is possible that they struggled to grasp new technologies and information given without practical demonstrations.

Those who irregularly attended extension programmes pointed out distant training sites and time as their major constraints. They had to market their produce and perform household tasks that included cooking, fetching wood and fetching water. One of the participants stated that she had never attended any farmer training programme because she travelled a lot. Cohen and Norman (2011) rightly pointed out that one of the limitations of participation is that it requires one to have time and the means to journey to far away meetings.

To ascertain the level to which women participate in extension programmes two extension officers were interviewed. Unfortunately, at the time of this study, the female extension officer in charge of Blocks C and D was on leave and could not be interviewed. The interviewed extension officers stated that the turn out for extension programmes was very low but hastened to mention that most of the attendees were women. One of the extension workers, Mr Chada, said, *“Women are the hub of our work, without them our work suffers.”* Lack of interest was cited as the main reason for low participation of farmers in extension programmes. According to Mr Chada, *“Most farmers attend when they hear that a donor is coming; they come in thousands and thousands.”* The extension officers then complained about lack of proper training sites, being understaffed and lack of proper housing. This is beyond the scope of this research and requires further investigation.

4.3.5 Women’s Participation in Monitoring and Evaluation of the Irrigation Project

Dinbabo, (2014) and Matsiliza (2012) indicate that it is essential for the public to participate in evaluating development projects because the community is directly involved in assessing whether the set goals and objectives have been achieved. It also provides the platform to assess the benefit of the development initiatives.

Most of the participants stated that they individually monitored and evaluated their own farm activities. Two participants mentioned that at times monitoring of farm activities was jointly conducted by the extension officers and farmers when the extension personnel visited the plots. Only one participant had been involved in group monitoring and evaluation of the project. This could be explained by the fact that few farmers regularly attended extension programmes.

Nevertheless, interviews with the extension officers revealed that participatory monitoring and evaluation was in its infancy. Mr Chada, frankly stated that participatory monitoring and evaluation of the project was lacking. According to Mr Chada, they involved farmers when they collected information for report writing. This type of participation is superficial for it only serves to achieve certain goals that do not empower the beneficiaries. Furthermore, it is stated in Chapter Three that extension officers got some of the information they needed to evaluate the project from the Grain Marketing Board and did not have to involve the farmers.

It is the researcher's concern that side-lining farmers in evaluating the project deprives farmers of an opportunity to learn from each other, share experiences, collectively identify problems and generate solutions that could improve their agricultural production.

4.3.6 Key factors Constraining Women's Participation in Agricultural Production

Respondents were asked to state problems hindering active participation in agricultural production. Lack of capital, lack of inputs, water shortages, market and transport constraints were the main factors affecting women's participation in agricultural activities.

4.3.6.1 Financial Constraints

Among the challenges facing farmers, lack of capital to buy farm inputs and farm implements ranked first. None of the participants had access to financial assistance and neither were there credit facilities in the study area. In addition, female farmers derived little income from their produce due to unavailability of cash and market in the area. Consequently, the farmers could not afford to purchase the needed farm inputs.

4.3.6.2 Lack of Farm Inputs

Lack of adequate inputs is one of the key challenges facing farmers in rural areas of Zimbabwe (Mutambara & Munodawafa, 2014; PRFT, 2013; ZIMSTAT, 2013a). The respondents in this study identified shortage of inputs as one of their main constraints to effective agricultural production. All the participants, including the village leaders and the extension officers, lamented about the soaring costs of inputs, especially fertiliser. This is in support of Mandizha (2015) who reported that farmers in Zimbabwe were battling to acquire inputs due to price hikes and limited financial resources. The farmers also complained that their fields were infertile and it was 'useless' to grow crops without applying fertiliser. In addition, the participants bemoaned that they had to travel all the way to Mutare to acquire farm inputs which further diminished their little farm incomes due to transport costs. It was clear that the farmers had relied for a long time on farm inputs from the government and the withdrawal of such donations had severely affected them. The general feeling was that the availability and affordability of inputs would not only improve their production but also their livelihoods.

4.3.6.3 Water Shortages

Limited access to irrigated water is one of the factors hindering the prosperity of some of the irrigation schemes in Zimbabwe (Mutambara & Munodawafa, 2014). Participants from Blocks C and D vehemently stressed that water shortages constrained their participation in farming. Some of the reasons for water shortages were that farmers did not follow the timetable; the canal was not wide and deep enough to carry large amounts of water and substantial amounts of water was lost through seepage because part of the canal was unlined. To cope with this challenge, farmers from blocks C and D stated that they irrigated at night while farmers from Blocks A and B were sleeping. Some irrigated from “12 midnight till 5 in the morning” and others “all night”. One participant said that she “*wanted to abandon farming due to water shortages.*” Such findings echo that of Thagwana (2009) whose study revealed that water shortages constrained women farmers at Tshiombo Irrigation Scheme in Limpopo, South Africa. Farmers from three irrigation schemes in Zimbabwe also reported water shortages (Mutambara & Munodawafa, 2014).

When asked whether they were not scared to work at night, the respondents answered that other farmers also irrigated their crops at night. It was evident that conflicts over irrigated water were rife. *Sabhuku Chaka* stated that, even if the people followed the timetable, water was still not sufficient because the canal was not as well maintained, or as wide and deep as it was during the liberation struggle.

The extension officers also confirmed that some farmers who were close to the water source did not abide by the by-laws. According to Mr Chada, one of the extension workers, the by-laws regarding offenders are just on paper and barely applied. No action was taken on irrigators who failed to comply with the requirements spelt out in the by-laws, because farmers either do not report offenders whom they were related to or they feared being bewitched.

4.3.6.4 Marketing and Transport Problems

The female respondents also stated that unavailability of viable markets in the study area curtailed their participation in agriculture. According to the participants accessing markets was difficult due to lack of reliable transport in the area. The participants bemoaned that the feeder road was poorly maintained and transport operators shunned the area. Kapungu (2013) also reported of poor road network in Chirumanzu, Zimbabwe. Although the irrigation

scheme is situated close to a Grain Marketing Board, most of the respondents revealed that they no longer sold their produce at GMB because they were not paid timeously and could not purchase the needed inputs in time. This is consistent with Mutenga (2014) who reported of poor service delivery at GMB.

Most of the participants stated that they sold their produce either locally to non-irrigators or to neighbouring villagers but revealed that cash was scarce in the rural areas and barter trade was widely practised. Others sold their produce in Mutare, the nearest city, but lamented that the market in Mutare was flooded with perishables so they often sold their produce at very low prices. According to the participants, the profit they got was too little to recover their expenses.

4.3.7 The Impact of the Irrigation Scheme on Livelihoods

Although the female farmers in this study generated little farm incomes, the majority testified that irrigation had enabled them to send children to school and acquire assets such as wheelbarrows, scotchcarts and livestock. The participants proudly stated that they had enough food on their table and did not experience hunger. According to the participants, irrigation farming had the potential to improve not only household food security but also their quality of life if productive resources were easily accessible.

The village leaders and the extension officers echoed the sentiments of the female farmers. Mr Ngoni, one of the extension workers stated that irrigation farming enhanced the health status of farmers. *Sabhuku* Ngoma had the following to say:

Irrigation farming improved the lives of many families in this area. Many of the houses that you see in this area were built from farm income. This house and that shop were built from income derived from farming. That grinding mill was also acquired from farm income.

The above testimonies demonstrate that participation in agricultural activities can economically empower the periphery people of the society and contribute to their well-being. As stated earlier, most female farmers also acknowledged that their social standing had improved and could actively engage in both household and community decision-making processes. Such findings were also reported by Chazovachii (2012) whose study found that irrigation farming economically empowered and socially emancipated women in Panganai Communal Area of Zimbabwe.

4.3.8 Ownership and Sustainability of the Irrigation Scheme

Davids (2009) states that participation makes people feel that development projects or activities belong to them. Having a sense of ownership enables communities to manage and to be in charge of their development; it ensures project longevity because it is sustained by its owners (De Beer & Swanepoel, 2011).

All the interviewed female farmers in this study regarded the irrigation project as their 'own'. They stated that they actively participated in the maintenance of the irrigation canal by removing debris from the canal, greasing the canal gates and repairing the irrigation canal. Sabhuku Ngoma also stated that some builders in the community frequently volunteered to repair the irrigation canal for no pay. Although this evidently conveys a sense of ownership and belonging, all the participants stated that they could not independently run the irrigation project without external help.

All the participants in this study called for help from the Government and NGOs in order to farm productively and ensure the sustainability of the project. The fact that the farmers could not stand on their own reveals that the sustainability of the irrigation scheme is questionable and the true sense of ownership is missing.

4.4 Conclusion

This study revealed that women participated in agricultural activities to produce food for household consumption and to earn income through the sale of surplus. The female farmers demonstrated a high level of participation in most farm activities but low participation in extension programmes. The research established that women's participation in the irrigation development programmes at Marange Irrigation Scheme was passive. The participants only took part in the identification and implementation stages. Observation and semi-structured interviews revealed that bureaucratic structures hampered the full participation of ordinary people in development projects since the beneficiaries of development did not make the final decisions.

Key factors constraining women's participation in farm activities were lack of capital, insufficient farming inputs, lack of a ready market and water shortages. Consequently, women's agricultural output and farm incomes were low showing that the sustainability of

the project was uncertain. Furthermore, the study revealed that women were underrepresented in local leadership positions. Despite these challenges that women faced, it was evident that participation in irrigation farming helped instil some sense of ownership, enhanced capacities and improved livelihoods. As a result, women in this study presented high levels of participation in farm decision-making at household level and in community decision-making. This demonstrates that participating in economic activities can liberate people from their circumstances, enhance confidence and ameliorate their socio-economic standing.

This study therefore argues that addressing women's agricultural needs and improving their access to agricultural productive resources could result in effective participation of women in agriculture and meaningful agricultural production. Furthermore, the inclusion of women in all decision-making processes, as well as other beneficiaries, could influence sustainability of development initiatives. Consequently, this could see the reduction of rural poverty.



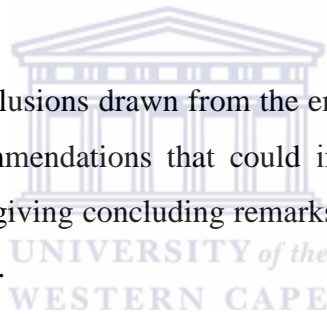
CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter concludes the study undertaken to investigate the nature and the extent of women's participation in agricultural production at Marange Irrigation Scheme. Using both quantitative and qualitative methods of research, the study focused particularly on (a) the level of women's participation in agricultural activities (b) the level of women's participation in decision-making processes and (c) the challenges and opportunities facing female farmers at Marange Irrigation Scheme. The participatory development theory that argues for a people-centred approach to development was employed in this study as the basis upon which the research was conducted.

Firstly, the chapter provides conclusions drawn from the empirical findings of this study and then offers some relevant recommendations that could improve women's participation in agriculture. The chapter ends by giving concluding remarks and highlighting areas that could be considered for further research.



5.2 Conclusions

This thesis has shown that participatory development advocates see development as a process where people fully participate in all decision-making processes. Chambers (1995:30) describes participation as an “empowering process which enables local people to do their own analysis, to take command, to gain in confidence, and to make their own decisions”. Participation can provide women, the marginalised and the underprivileged with an opportunity to influence community development projects (Davids, 2009:19; Cornwall, 2003). In light of this, the study sought to investigate the nature and the extent of women's participation in agricultural production at Marange Irrigation Scheme.

The study found that female farmers participated in agricultural production mainly to produce food for household consumption and earn income through the sale of produce. Only a few female farmers (39.13%) engaged in other income generating activities apart from farming,

showing that irrigation farming was the main economic activity in the study area and the sole source of income for most respondents.

Olawepo & Fatulu (2009) claim that women participate in varied farm activities but at varying degrees. In this study, women's level of participation in agricultural production was found to be high in most activities such as planting, weeding and harvesting, except for marketing. Factors such as transport problems, unavailability of cash and lack of a ready market in the area were cited as reasons for less participation in marketing. The results also showed that female farmers spent more time in agricultural activities than non-agricultural activities, further revealing that women farmers were actively involved in agricultural production. This is in line with Kaylani (2011) who found that tribal women in India highly participated in most farm activities and worked harder and longer than men.

The socio-economic variables considered for Pearson's correlation tests showed no significant relationship with the level to which women participate in agricultural activities. The correlation was weak, showing that the level to which women participate in agricultural activities was partly but not significantly determined by age, household income, education, land size and number of dependents. This showed that there could be other factors which determine women's level of participation in agricultural production that were not considered by the correlation tests.

Access to extension services helps farmers to acquire new technologies and productive practices (Mvududu, 1994; Sinyolo, 2014). Although extension services were available to all farmers, the study revealed that few female farmers (20%) regularly attended extension programmes. The female farmers cited time constraints and distant training sites as the key factors constraining their participation in extension programmes. Chancellor (1997) also reported that due to women's multiple roles, women in Gambia could not find time for training. Another important aspect mostly mentioned by the village leaders was that most farmers preferred practical training to theory and yet it was hardly offered. The extension officers cited lack of interest as the reason for less participation in extension programmes. According to the extension officers, most of the farmers participated if incentives were involved. Nonetheless, those who regularly attended extension programmes testified that extension classes were very useful, equipped them with a wide range of agricultural skills

including crop management, crop rotation and water management. In addition, the participants also mentioned that they shared ideas and skills during the training.

This study revealed that the key factors constraining women's level of participation in agricultural activities were lack of capital, limited agricultural inputs, market constraints and water shortages. The participants stated that there were no credit facilities in the area and cash was hard to come by. Due to financial constraints, female farmers could not afford to purchase farm inputs and implements that were sold at exorbitant prices. Accessing markets was difficult due to poor road and transport infrastructure. Female farmers mainly practised barter trade. Water shortages were caused by poor irrigation infrastructure and failure by some of farmers to follow the irrigation timetable. Due to these challenges, women's agricultural productivity was below capacity and farm incomes were low. This showed that the sustainability of the irrigation project was at stake. Moreover, all the participants indicated that they could not independently run the irrigation project without external back up. It is argued that improving women's access to agricultural productive resources could boost productivity and their role in agriculture (Ahmed *et al*, 2012; FAO, 2011; Mehra & Rojas, 2008). In view of this research's findings one can therefore argue that improving women's access to credit, farm inputs, irrigated water and markets could improve women's level of participation at Marange Irrigation Scheme and consequently enhance agricultural yields and farm proceeds. This could also help ensure the sustainability of the irrigation project.

It is believed that irrigation farming has the potential to reduce poverty, hunger and unemployment (Chazovachii, 2013; Jayne & Rukuni in Manzungu & Van der Zaag, 1996.) Although little incomes were derived from farming, the participants stated that irrigation farming had improved their livelihoods. Apart from being food secure, the participants testified that farm income enabled them to purchase household needs, pay school fees and buy uniforms for their children. Some of the participants were able to buy cattle, goats, wheelbarrows and scotch carts indicating that participation in agricultural activities economically empowered female farmers. In addition, all the participants in this study regarded the project as their own although they needed outside support.

As stated earlier, advocates of participatory development theory argue that participation is transformative for it contributes to the achievement of empowerment, among other things.

Swanepoel & De Beer (2011:52) argue that empowerment does not only mean to acquire skills but also “to have decision-making power”. With regards to decision-making, women farmers showed high levels of involvement in farm decision-making at household level. Women actively participated in making decisions such as usage of farm inputs, sowing and harvesting of crops. Some of the participants expressed that participation in agricultural activities had improved their social and economic status and could make their own farm decisions. It was also reported that some men had no interest in farming and let the women make farm decisions. This finding supports Raidimi’s (2014) study that revealed that most of the women in six agricultural projects in Thulamela Municipality in Limpopo, South Africa had absolute freedom to make farm decisions.

Women in this study actively participated in community decision-making. Community meetings were mostly attended by women who freely engaged in decision-making processes. However, women were marginally represented in village development committees and irrigation committees. This contradicts the 2013–2017 National Gender Policy (NGP, 2013:15) as well as the Constitution of Zimbabwe (2013) that call for equal representation of men and women in all decision-making structures. Some of the reasons given for the underrepresentation of women in leadership positions were that the voting process was at times politicised and some of the women culturally believed that men should take up leadership positions. Nevertheless, the majority confidently expressed that they voiced their ideas during meetings and their views were taken into consideration if they contributed meaningfully to the public debate.

Principle 20 of the Rio Declaration on Environment and Development 1992 states that the full participation of women is key to the achievement of sustainable development (UN, 1992). With regards to irrigation development programmes at Marange Irrigation Scheme, the participants did not take part in all decision-making processes. The female farmers indicated that they often participated in the identification of their needs but hardly in planning, designing and evaluation of the projects. At times, they were merely consulted on projects that development agents had already decided on. This was found to be an impediment to sustainable development and a contradiction to the participatory development theory that advocates the full involvement of all beneficiaries of development initiatives in *all* decision-making processes that affect their livelihoods and well-being.

5.3 Recommendations

In light of the aforementioned findings, the following recommendations can be made:

Promoting Savings Groups

This research established that lack of farm inputs was one of the key factors constraining women's participation in agricultural production. The study recommends that development organisations and government agencies need to promote savings groups among female farmers. Members of the group could contribute a fixed amount of money regularly towards their own savings. The female farmers could use some of their contributions to purchase farm inputs as a group rather than individually as this can help reduce costs. Savings groups could also enable female farmers to borrow from their own savings for the purchase of farm inputs and implements. Government agencies and development organisations could also help by training female farmers to run and take control of their savings groups.

Linking Farmers to Potential Markets

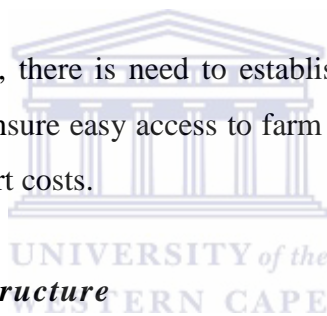
Access to markets was found to be one of the constraints facing female farmers. Linking farmers to agro-dealers or business companies could help address this challenge. The government and development agencies need to make a concerted effort to assist female farmers to strike a contract with agro-dealers. Networking with agro-dealers not only helps mitigate market constraints but also improves women's access to farm inputs. The female farmers could sell their produce to the agro-dealers whom they partnered with, who in turn would support farmers with affordable farm inputs and transport for produce. Partnering with agro-companies would enable farmers to farm productively and profitably and would consequently enhance their livelihoods.

Provision of Rural Infrastructure

It was observed that Marange Irrigation Scheme was characterised by poor infrastructure. Infrastructure development around the scheme is of paramount importance. The government needs to make focussed effort to provide both social and economic amenities like electricity, convenient water sources, financial institutions, better communication networks and better health and education facilities. Cleaver (1993:83) says, "Agriculture cannot be developed in isolation from physical infrastructure development, rural health and education, or even from sound urban development policy".

Communication networks such as roads and telephones would help link farmers to potential markets. Well maintained roads would improve transport availability and reliability and also make women's access to markets quicker and easier. Provision of infrastructure such as electricity and piped water supply would lighten the burden of female farmers who are laden with other workloads besides farming, such as fetching water and wood. This would consequently ease time constraints, one of the factors constraining some female farmers. Establishing financial institutions in the area could give female farmers access to loans needed to finance farming. Quick and easy access to market can be guaranteed if the government develops effective marketing infrastructure and improves service delivery at the Grain Marketing Board. It is envisaged that provision of rural infrastructure would improve agricultural productivity, enhance food and nutritional security, open up non-farm employment opportunities and consequently break the cycle of poverty.

As expressed by the participants, there is need to establish a local agro-business centre to service the farmers. This could ensure easy access to farm inputs and implements and would significantly cut down on transport costs.



Upgrading Irrigation Infrastructure

The government and development organisations should take a bold step to upgrade the irrigation infrastructure at Marange Irrigation Scheme. There is need to complete the lining of the irrigation canal, widen and deepen it to ensure equitable distribution of water and minimise water shortages. Water saving irrigation technologies that are less labour intensive should be considered not only to lighten the burden of women whose day to day schedules are loaded with various activities but save water as well. Installation of new canal gates is also critical to ease water shortages. This would enforce farmers to follow the irrigation timetable as canal gates would only be opened to those who are on the irrigation schedule.

Involving Female Farmers in all Project Phases

Participation of all beneficiaries of development in all project phases is critical to the sustainability of the development programmes. Female farmers should be afforded the opportunity to participate in all project phases from identification to planning, implementation and evaluation. This would enable the farmers to claim true ownership of the project and take full control of their destiny. Participatory monitoring and evaluation of the

project would also help female farmers make well-informed decisions about the project and improve performance.

Strengthening Extension Services

To improve women's competence in farming, extension services need to be strengthened. Theoretical training should always be accompanied by practical training to enable farmers to grasp and apply information and new technologies better. The irrigation management committee also needs to be trained on how to operate and manage the irrigation scheme. To improve women's participation in extension programmes, AGRITEX and other interested stakeholders need to develop and support programmes that specifically address women's agricultural needs. This entails involving female farmers in planning and designing extension programmes. In addition, convenient and apt places for extension services need to be developed at Marange Irrigation Scheme and women need to be motivated to participate in extension services.

Promoting Gender Equity in Local Governance

Although Zimbabwe is a signatory to several international and regional conventions which promote gender equality and has formulated its national gender policy framework, women are still marginally represented in local governance. The researcher strongly feels that the government should incentivise rural communities that have gender balanced village development committees to promote gender equity and eliminate gender disparity in decision-making positions. The government could for example reward such rural communities with electricity, tarred roads and piped water infrastructure.

A review of the by-laws regarding village development committees is necessary to ensure that women are well represented in decision-making positions and are also given the opportunity to lead these committees. The researcher recommends a secret ballot voting system to ensure a free and fair electoral process. Training programmes that motivate and sensitise women to take up leadership positions should be organised and promoted. This would enable female farmers to confidently and actively participate in the public domain.

Networking with other Female Farmers

Female farmers should be afforded the opportunity to visit other irrigation schemes or meet with other irrigators to share ideas, experiences and exchange skills. Linkages between female farmers and women organisations in agriculture should also be encouraged as this could enhance women's capacities through technology and skills transfer. Networking with such organisations could also open up doors for female farmers to easily access loans to finance farming.

Reviewing of Customary Laws

Although women play a pivotal role in agriculture, this study revealed that women accessed land through men who were given the usufructs rights. A review of customary laws is therefore necessary. Customary laws need to be gender-sensitive to promote female usufructs' land rights in communal lands of Zimbabwe. Women need to be recognised as equal players in development and have equal access to productive resources as men. This would consequently empower and ameliorate women's position in society.

Reintroducing Farm Input Subsidy Programme

The government should reconsider subsidising farm inputs to enable farmers to purchase inputs at affordable prices.

Encouraging Farmers to Make Use of Organic Fertilisers

Extension officers should make a concerted effort to encourage farmers to make use of organic fertilisers. This would cut down the costs of buying inorganic fertilisers which are beyond reach of many rural female farmers.

Incentivising Female Farmers

Since women are the key food producers in rural areas, there is need to recognise women farmers who excel in farming. Celebrating success would give the farmers the motivation they need to keep working hard and this would consequently improve participation and productivity.

5.4 Areas of Further Study

A study of this nature could also be done at other irrigation schemes in Zimbabwe or South Africa. None of the variables considered by the Pearson correlation test in this research were

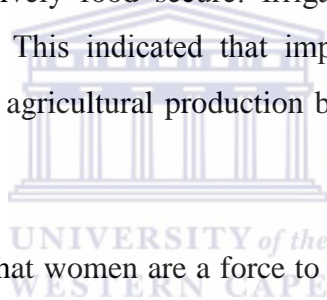
significantly correlated with the level to which women participate in agricultural activities. This showed that there could be other factors that determine women's participation level in agricultural activities. More research is therefore needed on this area. Other statistical tools such as regression analysis could also be employed.

It would also be interesting to do a comparative analysis of the challenges and opportunities facing women irrigators and non-irrigators in the current study area.

5.5 Concluding Remarks

This study revealed that women actively participated in agricultural production but lacked the critical productive resources needed for greater production. Women's participation level in the irrigation development projects was found to be passive for they hardly took part in planning, designing and evaluation of development activities. Despite these challenges, women in this study were relatively food secure. Irrigation farming enhanced women's livelihoods and their capacities. This indicated that improving women's participation in agriculture would not only boost agricultural production but see the reduction of household food insecurity and poverty.

In a nutshell, this study showed that women are a force to be reckoned with in the pursuit of development. The full inclusion of women in the development process would strengthen not only their social and economic position but also bring meaningful development to the community.



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ANNEXURE 1: Questionnaire for Female Farmers

Research Topic: An Assessment of Women’s Participation in Agricultural Production: A Case Study of Marange Irrigation Scheme in Zimbabwe.

My name is Patience Simango and I am a Masters student at the University of Western Cape in South Africa. I am conducting a study to investigate the nature and the extent of women’s participation in agricultural production. In view of this, I am inviting you to fill in this questionnaire. All information collected in this questionnaire is anonymous and confidential. The information that you provide will be used solely for research purposes and it is envisaged that the results will assist agricultural policy makers, rural development practitioners and other interested stakeholders with information that might improve women’s participation in agricultural production. It will take about 45 minutes to 1 hour to fill in this questionnaire. Your participation and input will be highly appreciated.

SECTION A. Personal and Socio-Economic Characteristics (Please tick the appropriate box)

1. Age

2. Marital status

Married (1)	Widowed (2)	Divorced (3)	Single (4)	Other (5)
-------------	-------------	--------------	------------	-----------

3. Sex of household head

Male (1)	Female (2)
----------	------------

4. Who is the breadwinner?

Husband (1)	Son (2)	Daughter (3)	Myself (4)	Other (5)
-------------	---------	--------------	------------	-----------

5. How many dependents do you have?

None (1)	One (2)	Two (3)	Three (4)	Four (5)	Five+ (6)
----------	---------	---------	-----------	----------	-----------

6. Which village do you fall under?

Ngonya (1)	Njerere (2)	Shundure (3)	Mwandiambira (4)
------------	-------------	--------------	------------------

7. Please indicate the highest level of education attained.

No formal education (1)	Primary level (2)	Secondary level (3)	Advanced level (4)	Tertiary level (5)
-------------------------	-------------------	---------------------	--------------------	--------------------

8. What is your total household monthly income?

< \$50 (1)	\$ 51-100 (2)	\$101-200 (3)	\$201-300 (4)	\$301-400 (5)	401+ (6)
------------	---------------	---------------	---------------	---------------	----------

9. Do you engage in any other income generating activities apart from farming?

Yes (1)	No (2)
---------	--------

SECTION B. Agricultural Productivity

10. Why do you engage in farming activities? Please, tick all that applies to you.

1.	To produce food for household consumption	
2.	To earn income from sale of crops	
3.	To supplement income	
4.	Other (specify)	

11. Indicate the type of crops you grow and average production per season.

	Crop	Average Production per Season (kg/tonnes)
1.	Maize	
2.	Tobacco	
3.	Wheat	
4.	Groundnuts	
5.	Tomatoes	
6.	Other (specify)	

12. Indicate your level of satisfaction with your agricultural yields.

Very satisfied (1)	Fairly satisfied (2)	Somewhat dissatisfied (3)	Not at all satisfied (4)
--------------------	----------------------	---------------------------	--------------------------

13. How many people work on your farm?

One (1)	Two (2)	Three (3)	Four (4)	Five+ (5)
---------	---------	-----------	----------	-----------

14. Do you get a surplus from your harvest?

Yes (1)	No (2)
---------	--------

15. Do you have storage facilities?

Yes (1)	No (2)
---------	--------

16. Do you sell your produce? (If no, go to number 20)

Yes (1)	No (2)
---------	--------

16a. If yes, where do you sell your produce?

17. Do you face any market related problems?

Yes (1)	No (2)
---------	--------

17a. If yes, please explain

.....

18. What is your total monthly farm income?

< \$50 (1)	\$ 51– 100 (2)	\$101– 200 (3)	\$201– 300 (4)	\$301– 400 (5)	401+ (6)
------------	----------------	----------------	----------------	----------------	----------

19. Please indicate how you use farm income. (Please tick all that applies to you).

	Uses of Farm Income	Answer
1.	Household needs	
2.	School fees	
3.	Purchase farm inputs	
4.	Pay debts	
5.	Other (specify)	

20. Please indicate all farm assets that you possess.

	Assets	Answer
1.	Tractor	
2.	Scotch cart	
3.	Wheelbarrow	
4.	Plough	
5.	Cattle	
6.	Goats	
7.	Other (specify)	

SECTION C. Accessibility to Productive Resources and Services

Access to Land

21. Indicate the owner of the land where you practise farming.

	Owner of the Land	Answer
1.	Self	
2.	Husband	
3.	Son	
4.	Relative	
5.	Renting	

22. If you are the owner, please indicate how you acquired the land.

Allocated own land (1)	By inheritance (2)	Through marriage (3)	4. Other (4)
------------------------	--------------------	----------------------	--------------

23. Please indicate size of land.....

Access to Credit

24. Have you ever obtained credit for your farming activities?

Yes (1)	No (2)
---------	--------

24a. If yes, when did you last obtain credit?

Last season (1)	A year ago (2)	Two years ago (3)	More than three years ago (4)
-----------------	----------------	-------------------	-------------------------------

24b. If no, why? (*Tick all that applies to you*).

1.	No collateral	
2.	Not aware of any credit facilities	
3.	It's a difficult process	
4.	Unable to repay	
5.	Do not require credit	
6.	Other (specify)	

Access to Extension Services

25. Are you aware of any extension services in your area?

Yes (1)	No (2)
---------	--------

26. Are there female extension officers in your area?

Yes (1)	No (2)
---------	--------

27. If no, do you feel comfortable to consult a male extension officer?

Yes (1)	No (2)
---------	--------

28. Do extension agents organise training programmes for farmers?

Yes (1)	No (2)
---------	--------

28a. If yes, have you ever attended any farmer training programme?

Yes (1)	No (2)
---------	--------

28b. If no, would you want to receive agricultural training to improve your farming skills?

Yes (1)	No (2)
---------	--------

Access to Agricultural Inputs

29. Have you ever received any agricultural inputs from the government or other organisations?

Yes (1)	No (2)
---------	--------

29a. If yes, when did you last receive agricultural inputs from the government or other organisations?

Last season (1)	A year ago (2)	Two years ago (3)	More than three years ago (4)
-----------------	----------------	-------------------	-------------------------------

29b. Please indicate inputs that you received.

Seeds (1)	Fertiliser (2)	Farm tools (3)	Pesticides (4)
-----------	----------------	----------------	----------------

SECTION D. Participation Levels in Agricultural Activities

30. How much time do you spend in agricultural activities?

1– 2hrs (1)	3– 4hrs (2)	5– 6hrs (3)	7– 8hrs (4)	9hrs+ (5)
-------------	-------------	-------------	-------------	-----------

31. How much time do you spend in non-agricultural activities?

1 – 2hrs (1)	3 – 4hrs (2)	3. 5 – 6hrs (3)	7 – 8hrs (4)	9hrs+ (5)
--------------	--------------	-----------------	--------------	-----------

32. Indicate your level of participation in the following agricultural activities. Tick the appropriate answer.

Agricultural Activities	Level of Participation		
	Low (1)	Medium (2)	High (3)
Land Clearing			
Planting			
Weeding			
Harvesting			
Marketing			

33. Please indicate your overall rate of participation in agricultural activities.

High (1)	Medium (2)	Low (3)
----------	------------	---------

34. Please indicate your level of participation in making decisions about the following farm activities.

Agricultural Activities	Extent of Participation in Farm Decision-Making		
	Low (1)	Medium (2)	High (3)
Usage of farm inputs			
Sowing time			
Harvesting time			
Sale of crops			
Usage of farm income			

35. Indicate your overall rate of participation in farm decision-making.

High (1)	Medium (2)	Low (3)
----------	------------	---------

36. Please tick all factors that constrain your participation in agricultural activities.

Constraints	Yes (1)	No (2)
Time constraints		
Water shortages		
No own land		
Financial constraints		
Limited agricultural inputs		
Distant extension training sites		

37. What are your recommendations for more effective participation of women in agricultural production?

.....

.....

.....

38. Write any other comment you think is relevant to this study.

.....

.....

.....

Thank you for your participation.
The End

ANNEXURE 2: Semi-Structured Interviews for Female Farmers

Research Topic: An Assessment of Women's Participation in Agricultural Production: A Case Study of Marange Irrigation Scheme in Zimbabwe.

My name is Patience Simango and I am a Masters student at the University of Western Cape in South Africa. I am conducting a study to investigate the nature and the extent of women's participation in agricultural production. In view of this, I am inviting you to participate in this interview. All information you will provide will be anonymous and confidential. The information that you provide will be used solely for research purposes and it is envisaged that the results will assist agricultural policy makers, rural development practitioners and other interested stakeholders with information that might improve women's participation in agricultural production. The interview will take approximately 45 minutes to one hour. Your participation and input will be highly appreciated.

A. Participation in Decision-Making and Capacity Building Processes

1. How often do you attend community meetings?
2. How do you get information about community meetings and activities?
3. Are meetings conducted in a free and conducive environment?
4. Are women allowed to share their views during meetings?
5. Do you think women's views and opinions are taken seriously and considered in planning?
6. Were you fully involved in initiating, planning and implementation of the irrigation project? If yes, what was your role?
7. Do you fully take part or participate in making decisions about the irrigation project? If yes, how would you rate your level of influence?
8. Do you hold any leadership position in village development committees or irrigation committees?
9. How often do you attend farmer training programmes? How useful are these programmes?
10. Have you ever taken part in monitoring and evaluation exercises of the irrigation project?

B. Prospects and Challenges Facing Female Farmers

11. In your view, what are the main challenges facing farmers, especially women?
12. How do you cope with such challenges?
13. Has your livelihood improved since you began farming?

C. Sustainability and Ownership of the Irrigation Scheme

14. Do the farmers own the irrigation scheme?
15. Do you think the farmers have the ability to keep the irrigation scheme running after the withdrawal of the government or funders?

Thank you for participation.



ANNEXURE 3: Semi-Structured Interviews for Extension Officers

Research Topic: An Assessment of Women's Participation in Agricultural Production: A Case Study of Marange Irrigation Scheme in Zimbabwe.

My name is Patience Simango and I am a Masters student at the University of Western Cape in South Africa. I am conducting a study to investigate the nature and the extent of women's participation in agricultural production. In view of this, I am inviting you to participate in this interview. All information you will provide will be anonymous and confidential. The information that you provide will be used solely for research purposes and it is envisaged that the results will assist agricultural policy makers, rural development practitioners and other interested stakeholders with information that might improve women's participation in agricultural production. The interview will take approximately 45 minutes to 1hour. Your participation and input will be highly appreciated.

A. Extension Services at Marange Irrigation Scheme

1. How long have you worked in Marange?
2. What is your position at Marange Irrigation Scheme?
3. What is the gender distribution of extension officers at Marange Irrigation Scheme?
4. What agricultural services do you offer?
5. How often do you organise training programmes for farmers?

B. Participation of Female Farmers in Extension Programmes

6. Do female farmers fully participate in extension programmes?
7. Do female farmers freely articulate their concerns? If yes, are their concerns taken into account in planning processes?
8. How do you ensure that farmers, especially women, have access to information regarding extension programmes?

C. Constraints and Potential in Irrigation Farming

9. How would you rate agricultural production at Marange Irrigation Scheme in the last five years?
10. Do you think women's participation in agriculture is key to improving livelihood?
11. In what way is the government assisting farmers?
12. What are the main obstacles that impede optimal yield?

D. Monitoring and Evaluation

13. How often do you monitor and evaluate the irrigation scheme?
14. Does the community, especially women, take part in monitoring and evaluation exercises of the irrigation ?

15. What is the purpose of monitoring and evaluation exercises?

E. Sustainability of the Irrigation Scheme

16. Do the farmers own the irrigation scheme?

17. Do you think that the farmers have the ability to keep the irrigation scheme running after the withdrawal of the government or funders?

Thank you for participation.



ANNEXURE 4: Semi-Structured Interviews for Village Leaders

Research Topic: An Assessment of Women's Participation in Agricultural Production: A Case Study of Marange Irrigation Scheme in Zimbabwe.

My name is Patience Simango and I am a Masters student at the University of Western Cape in South Africa. I am conducting a study to investigate the nature and the extent of women's participation in agricultural production. In view of this, I am inviting you to participate in this interview. All information collected in this questionnaire is anonymous and confidential. The information that you provide will be used solely for research purposes and it is envisaged that the results will assist agricultural policy makers, rural development practitioners and other interested stakeholders with information that might improve women's participation in agricultural production. The interview will take approximately 45 minutes to 1 hour. Your participation and input will be highly appreciated.

A. Participation of Women in Decision-Making Processes

1. How often do you hold community meetings?
2. Do women attend meetings? If yes, are they given the opportunity to participate during meetings?
3. Are women's concerns listened to and taken into account in planning processes?
4. Are women allowed to take part in development projects? Do they fully participate in the development process?
5. Do women hold leadership positions in village development committees or irrigation committees?
6. Do women fully take part or participate in making decisions about the irrigation project?
7. Were women fully involved in initiating, planning and implementation of the irrigation scheme?

B. Accessibility to Agricultural Productive Resources

8. How do people acquire land in this village?
9. Do women have the right to own land in this community?
10. Are there any credit facilities in this community?
11. How reliable is public transport in this community?
12. How do you ensure that people have access to important information?

C. Constraints and Potential in Farming

13. In what way is the government helping farmers?
14. Do you think the irrigation scheme has the potential to improve livelihoods in your community?
15. In your view, what are the main challenges facing farmers, particularly women?

D. Sustainability of the Irrigation Project.

16. Do the farmers own the irrigation scheme?
17. Do you think the farmers have the ability to keep the irrigation scheme running after the withdrawal of the government or funders?

Thank you for participation.

ANNEXURE 5: Stata Do File

```
log using "C:\Users\Patience\Desktop\Patience S.smcl"
import excel "C:\Users\Patience\Desktop\SIMANGO.xls", sheet("Sheet1") firstrow
label define Marital status 1 "Married" 2 "Widowed" 3 "Divorced" 4 "Single"
label values Marital status Marital status
label define Sex of household 1 "Male" 2 "Female"
label values Sex of household Sex of household
label define Breadwinner 1 "Husband" 2 "Son" 3 "Daughter" 4 "Myself"
label values Breadwinner Breadwinner
label define Number of dependents 1 "None" 2 "One" 3 "Two" 4 "Three" 5 "Four" 6 "Five+"
label values Number of dependents Number of dependents
label define Village 1 "Ngonya" 2 "Njerere" 3 "Shundure" 4 "Mwandiambira"
label values Village Village
label define Education level 1 "No formal education" 2 "Primary education" 3 "Ordinary
level (Forms 1-4)" 4 "Advanced level (Forms 5-6)"
label values Education level Education level
label define Household monthly income 1 "<$50" 2 "$50-100" 3 "$101-200" 4 "$201-300" 5
"$301-400" 6 "$401"
label values Household monthly income Household monthly income
label define Other occupation 1 "Yes" 2 "No"
label values Other occupation Other occupation
label define Produce food for household consumption 1 "Yes"
label values Produce food for household consumption Produce food for household
consumption
label define Earn Income 1 "Yes"
label values Earn income Earn income
label define Supplement income 1 "Yes"
label values Supplement income Supplement income
label define Number Farm workers 1 "One" 2 "Two" 3 "Three" 4 "Four" 5 "Five+"
label values Number of farm workers Number of farm workers
label define Surplus 1 "Yes" 2 "No"
label values Surplus Surplus
label define Storage facilities 1 "Yes" 2 "No"
```


label values Storage facilities Storage facilities

label define Market produce 1 "Yes" 2 "No"

label values Market produce Market produce

label define Market problem 1 "Yes" 2 "No"

label values Market problem Market Problem

label define Farm income 1 "\$<50" 2 "\$50-100" 3 "\$101-200" 4 "\$201-300" 5 "301-400" 6 "\$401+"

label values Farm income Farm income

label define Household needs 1 "Yes"

label values Household needs Household needs

label define School fees 1 "Yes"

label values School fees School fees

label define Purchase Farm inputs 1 "Yes"

label values Purchase Farm inputs Purchase Farm inputs

label define Pay debts 1 "Yes"

label values Pay debts Pay debts

label define Tractor 1 "Yes" 2 "No"

label values Tractor Tractor

label define Scotchcart 1 "Yes" 2 "No"

label values Scotchcart Scotchcart

label define Wheelbarrow 1 "Yes" 2 "No"

label values Wheelbarrow Wheelbarrow

label define Plough 1 "Yes" 2 "No"

label values Plough Plough

label define Cattle 1 "Yes" 2 "No"

label values Cattle Cattle

label define Goats 1 "Yes" 2 "No"

label values Goats Goats

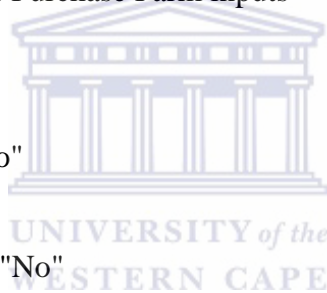
label define Land owner 1 "Own" 2 "Husband" 3 "Son" 4 "Relative" 5 "Renting"

label values Land owner Land owner

label define Acquisition of land 1 "allocated own land" 2 "By inheritance" 3 "Through marriage"

label values Acquisition of land Acquisition land

label define Access credit 1 "Yes" 2 "No"



label values Access credit Access credit

label define Time last accessed credit 1 "Last season" 2 "A year ago" 3 "Two years ago" 4 "More than three years ago"

label values Time last accessed credit Time last accessed credit

label define Aware of extension services 1 "Yes" 2 "No"

label values Aware of extension services Aware of extension services

label define Attended training programme 1 "Yes " 2 "No"

label values Attended training programme Attended training programme

label define Wish to train 1 "Yes" 2 "No"

label values Wish to train Wish to train

label define Access to inputs 1 "Yes" 2 "No"

label values Access to inputs Access to Inputs

label define Time last accessed inputs 1 "Last season" 2 "A year ago" 3 "Two years ago" 4 "More than three years ago"

label values Time last accessed inputs Time last accessed inputs

label define Marketing 1 "Low" 2 "Medium" 3 "High"

label values Marketing Marketing

label define Time spend in agricultural activities 1 "1-2hrs" 2 "3-4hrs" 3 "5-6hrs" 4 "7-8" 5 "9hrs"

label values Time spend in agricultural activities Time spend in agricultural activities

label define Time spend in non-agricultural activities 1 "1-2hrs" 2 "3-4hrs" 3 "5-6hrs" 4 "7-8hrs" 5 "9hrs"

label values Time spend in non-agricultural activities Time spend in non-agricultural activities

label define Land clearing 1 "Low" 2 "Medium" 3 "High"

label values Land clearing Land clearing

label define Planting 1 "Low" 2 "Medium" 3 "High"

label values Planting Planting

label define Weeding 1 "Low" 2 "Medium" 3 "High"

label values Weeding Weeding

label define Harvesting 1 "Low" 2 "Medium" 3 "High"

label values Harvesting Harvesting

label define Overall rate of participation in agricultural activities 1 "Low" 2 "Medium" 3 "High"

label values Overall rate of participation in agricultural activities

label define Use of farm inputs 1 "Low" 2 "Medium" 3 "High"

label values Use of farm inputs Use of farm inputs

label define Sowing time 1 "Low" 2 "Medium" 3 "High"

label values Sow time Sow time

label define Harvesting time 1 "Low" 2 "Medium" 3 "High"

label values Harvesting time Harvesting time

label define Sale of crops 1 "Low" 2 "Medium" 3 "High"

label values Sale of crops Sale of crops

label define Use of farm income 1 "Low" 2 "Medium" 3 "High"

label values Use of farm income use of farm income

label define Overall rate of participation in farm decision-making 1 "Low" 2 "Medium" 3 "High"

label values Overall rate of participation in farm decision-making Overall rate of participation in farm decision-making

label define Time constraints 1 "Yes" 2 "No"

label values Time Constraints Time Constraints

label define Water shortages 1 "Yes" 2 "No"

label values Water shortages Water shortages

label define Lack of land 1 "Yes" 2 "No"

label values Lack of land Lack of land

label define Financial constraints 1 "Yes" 2 "No"

label values Financial constraints Financial constraints

label define Limited farm inputs 1 "Yes" 2 "No"

label values Limited farm inputs Limited farm inputs

label define Distant training sites 1 "Yes" 2 "No"

label values Distant training sites Distant training sites

save "C:\Users\Patience\Desktop\Patience S.dta"

sum Age, detail

summarize Age if Age>30

summarize Age if Age<30

summarize Age if Age<40

graph pie, over(Marital status) angle(180) pie(_all, explode) plabel(_all percent) title(Marital Status of the Respondents)

```

graph save Graph "C:\Users\Patience\Desktop\Graph 1.gph"
tab Marital status
tab Sex of household
tab Breadwinner
tab Number of dependents
tab Village
label define Education level 1 "No formal education" 2 "Primary education" 3 "Ordinary
level (Forms 1-4)" 4 "Advanced level (Forms 5-6)" 5 "Tertiary level", replace
save "C:\Users\Patience\Desktop\Patience S.dta", replace
histogram Education level, bin(9) percent fcolor(lavender) lcolor(black) addlabel
addlabopts(mlabsize(medsmall) mlabcolor(dkgreen) mlabangle(horizontal)) normal
normopts(lcolor(black)) ytitle(Percentages) ytitle(, size(medlarge) margin(medsmall))
ylabel(, labsize(medsmall) labcolor(black) angle(horizontal)) xtitle(Education Levels) xtitle(,
size(medlarge) margin(medsmall)) xlabel(, labsize(medsmall) angle(vertical) valuelabel)
title(Education level of the Respondents)
graph save Graph "C:\Users\Patience\Desktop\Graph 2.gph"
tab Household monthly income
graph save Graph "C:\Users\Patience\Desktop\Graph 3.gph"
tab Other occupation
tab Produce food for household consumption
tab Earn income
tab Supplement_income
sum Maize yieldkg Bean yieldkg Wheat yieldkg Groundnuts yieldkg Tomatoes yieldkg,
detail
tab Number of farm workers
tab Surplus
tab Storage facilities
tab Market produce
tab Market problem
tab Farm income
graph bar (mean) Maize Groundnuts Wheat Tomatoes, over(Village) stack blabel(bar,
position(center)) ytitle(Average Yields per Season) ytitle(, size(medium) margin(medsmall))
ylabel(, angle(horizontal)) title(Average Crop Yields per Season by Village, size(medlarge))
graph save Graph "C:\Users\Patience\Desktop\Graph 4.gph"

```

```

histogram Level of satisfaction, bin(10) percent fcolor(lavender) lcolor(black) vertical
addlabel addlabopts(mlabsize(medsmall) mlabcolor(dkgreen) mlabangle(horizontal)
mlabgap(0)) normal normopts(lcolor(black)) ytitle(Percentages) ytitle(, size(medium)
margin(medium)) ylabel(, labsize(medsmall) labcolor(black) angle(horizontal)) xtitle(Level
of Satisfaction) xtitle(, size(medium) margin(medium)) xlabel(, labsize(medium)
angle(vertical) valuelabel) title(Level of Satisfaction with Farm Yields, margin(medsmall))
graph save Graph "C:\Users\Patience\Desktop\Graph 5.gph"
tab Level of satisfaction
label define Level of satisfaction 1 "Very satisfied" 2 "Fairly Satisfied" 3 "Somewhat
dissatisfied" 4 "Not at all satisfied"
histogram Level of satisfaction, bin(10) percent fcolor(lavender) lcolor(black) vertical
addlabel addlabopts(mlabsize(medsmall) mlabcolor(dkgreen) mlabangle(horizontal)
mlabgap(0)) normal normopts(lcolor(black)) ytitle(Percentages) ytitle(, size(medium)
margin(medium)) ylabel(, labsize(medsmall) labcolor(black) angle(horizontal)) xtitle(Level
of Satisfaction) xtitle(, size(medium) margin(medium)) xlabel(, labsize(medium)
angle(vertical) valuelabel) title(Level of Satisfaction with Farm Yields, margin(medsmall))
graph save Graph "C:\Users\Patience\Desktop\Graph 5.gph", replace
save "C:\Users\Patience\Desktop\Patience S.dta", replace
tab Household needs
tab Purchase farm inputs
tab School fees
tab Pay debts
tab Tractor
tab Scotchcart
tab Wheelbarrow
tab Plough
tab Cattle
tab Goats
tab Land owner
tab Acquisition land
tab Access credit
tab Time last accessed credit
tab Constraints to credit
tab Aware of extension services

```

tab Attend training programme
 tab Wish to train
 tab Access to inputs
 tab Time last accessed inputs
 tab Marketing
 tab Time spend in agricultural activities
 tab Time spend in non-agricultural activities
 tab Land clearing
 tab Planting
 tab Weeding
 tab Harvesting
 tab Overall rate of participation in agricultural activities
 pwcrr Overall rate of participation in agricultural activities Landsize Household monthly
 income Education level Number of dependents Age, star(5)
 tab Use Farm inputs
 tab Sowing time
 tab Harvesting time
 tab Sale of crops
 tab Use of farm income
 tab Overall rate of participation in farm decision-making
 tab Time constraints
 tab Water shortages
 tab Lack of land
 tab Financial constraints
 tab Limited farm inputs
 tab distant training sites
 pwcrr Overall rate of participation in farm decision-making Age Education level Farm
 income, star(5)
 summarize Landsize if Landsize<1
 summarize Landsize if Landsize<2
 log close



ANNEXURE 6: Reference Letter from Mutare Rural District Council

ALL COMMUNICATIONS SHOULD BE ADDRESSED TO THE CHIEF EXECUTIVE OFFICER
MUTARE RURAL DISTRICT COUNCIL

SUBOFFICE

Box 958
Zimunya Township
MUTARE
Tel: 020 - 64305
Workshop Tel: 020 - 62394

HEAD OFFICE

Cnr. 'C' Avenue & Riverside Drive
P O Box 604
MUTARE
Tel: 020 - 61587/64737
Fax : 020 69125

REF: XC/157MISC

21 August 2014

The Ward Councillor – Ald. Tsoriyo
Ngomasha Ward 12

Dear Madam

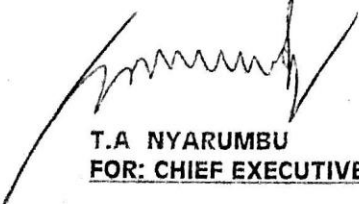
REF: PATIENCE MASIMBA SIMANGO I.D NO. 75-171481F-75

UNIVERSITY of the
WESTERN CAPE

The above referenced student is a Masters student at the University of Western Cape who wants to undertake a research study in your ward.

May you allow her access and give her assistance as needed.

Yours faithfully


T.A NYARUMBU
FOR: CHIEF EXECUTIVE OFFICER

TAN/cm



ANNEXURE 7: Research Participant Consent Form



University of the Western Cape

Private Bag X17, Bellville 7535, Cape Town, South Africa
Telephone : (021) 959 3858/6 Fax: (021) 959 3865

E-mail: pkippie@uwc.ac.za or spenderis@uwc.ac.za

Letter of consent:

CONSENT BY RESEARCH PARTICIPANT/INSTITUTION

I....., have had the opportunity to ask any questions relating to the research study that assesses the participation of women in agricultural production at Marange Irrigation Scheme. I have received satisfactory answers to my questions, and any additional details I wanted.

I agree to take part in this research, which is a thesis for the award of Masters of Arts in Development Studies. I understand that my participation in this study is voluntary. I am free not to participate and have the right to withdraw from the study at any time, without having to explain myself. I am aware that this interview might result in research which may be published, but my name may be/ not be used (circle appropriate). I understand that if I don't want my name to be used that this will be ensured by the researcher. I may also refuse to answer any questions that I don't want to answer.

I am aware that I can contact the researcher, Patience Simango (0027785702968), or her supervisor Dr. Mulugeta Dinbabo (0027721024947) should I have any queries regarding this research.

Date:.....

Participant Name:.....

Participant Signature.....

Interviewer name:.....

Interviewer Signature:.....



UNIVERSITY of the
WESTERN CAPE

ANNEXURE 8: Information Sheets for Research Participants

A. INFORMATION SHEET (Semi-Structured Interviews for Female Farmers)

Project Title: An Assessment of Women's Participation in Agricultural Production: A Case Study of Marange Irrigation Scheme in Zimbabwe.

What is this study about?

My name is Patience Masimba Simango, a student at the University of Western Cape in South Africa. I am conducting a research to investigate the nature and the extent of women's participation in agricultural production. It is envisaged that the results of this study will assist agricultural policy makers, rural development practitioners and other interested stakeholders with information that might improve women's participation in agricultural production. In view of this, I am inviting you to participate in this research project because you are a female farmer at Marange Irrigation Scheme and your ideas and opinions will be of great value to this study. Your participation and input will be highly appreciated.

What will I be asked to do if I agree to participate?

If you agree to participate in this research project, you will be asked to answer questions that provide information about your involvement in decision-making and capacity building processes, accessibility to relevant information and prospects and challenges in farming. The interview will take about 45 minutes to one hour and will be held at a place of your choice.

Would my participation in this study be kept confidential?

All your personal information, including your name, will be kept confidential and will not be disclosed to anyone. Only pseudonyms will be used in the final report and in all published reports to protect your privacy. Your identity will be protected to the maximum extent possible.

This research project involves making audiotapes and photographs of you. The interview will be audiotaped so that I can accurately transcribe the conversation. All information obtained from the interview will be treated with strict confidentiality and will be used for research purposes only. The audiotapes, photographs and interview notes will be kept securely in a locked file cabinet in my study room that will only be accessed by me. Furthermore, you and I will be asked to sign a consent form that binds me to keep to what we would have agreed upon.

What are the risks of this research?

There are no known risks associated with participating in this research project.

What are the benefits of this research?

This research is not designed to help you personally, but the results may help the investigator learn more about the degree to which women participate in agricultural production, the problems and the prospects that they face. It is hoped that this study will allow policy makers

and development practitioners to have a deeper knowledge and understanding of the challenges facing female farmers and to come up with informed and better ways of improving women's participation in agriculture. It is felt that if obstacles that prevent women from participating fully in agricultural production are removed, that could result in increased food production that would see the reduction of household food insecurity and poverty.

Do I have to be in this research and may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalised or lose any benefits to which you otherwise qualify.

Is any assistance available if I am negatively affected by participating in this study?

This research will not expose you to any harm as a result of your participation.

What if I have questions?

If you have any questions feel free to contact Patience Masimba Simango, the researcher, at 180 main Road, Kalk Bay, 7975, Cape Town South Africa. My phone number is 0027 785702968 and my e-mail address is patiencemsimango@yahoo.com

If you have any questions about the research study itself, please contact my supervisor Dr. Dinbabo at The Institute for Social Development (ISD), University of Western Cape. His telephone number is 0027 219593858

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Professor Julian May

Head of Department: Institute for Social Development

School of Government

University of the Western Cape

Private Bag X17

Bellville 7535

This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics Committee.

B. INFORMATION SHEET (Semi-Structured Interviews for Village Leaders)

Project Title: An Assessment of Women's Participation in Agricultural Production: A Case Study of Marange Irrigation Scheme in Zimbabwe.

What is this study about?

My name is Patience Masimba Simango, a student at the University of Western Cape in South Africa. I am conducting a research to investigate the nature and the extent of women's participation in agricultural production. It is envisaged that the results of this study will assist agricultural policy makers, rural development practitioners and other interested stakeholders with information that might improve women's participation in agricultural production. In view of this, I am inviting you to participate in this research project because you are one of the village leaders in Marange and your ideas and opinions will be of great value to this study. Your participation and input will be highly appreciated.

What will I be asked to do if I agree to participate?

If you agree to participate in this research project, you will be asked to answer questions that provide information about the participation of women in decision-making processes, availability and accessibility of agricultural resources such as land to female farmers, challenges and prospects facing farmers and sustainability of the irrigation project. The interview will take about 45 minutes to one hour and will be held at a place of your choice.

Would my participation in this study be kept confidential?

All your personal information, including your name will be kept confidential and will not be disclosed to anyone. Only pseudonyms will be used in the final report and in all published reports to protect your privacy. Your identity will be protected to the maximum extent possible.

This research project involves making audiotapes and photographs of you. The interview will be audiotaped so that I can accurately transcribe the conversation. All information obtained from the interview will be treated with strict confidentiality and will be used for research purposes only. The audiotapes, photographs and interview notes will be kept securely in a locked file cabinet in my study room that will only be accessed by me. Furthermore, you and I will be asked to sign a consent form that binds me to keep to what we would have agreed upon.

What are the risks of this research?

There are no known risks associated with participating in this research project.

What are the benefits of this research?

This research is not designed to help you personally, but the results may help the investigator learn more about the degree to which women participate in agricultural production, the problems and the prospects that they face. It is hoped that this study will allow policy makers and development practitioners to have a deeper knowledge and understanding of the

challenges facing female farmers and to come up with informed and better ways of improving women's participation in agriculture. It is felt that if obstacles that prevent women from participating fully in agricultural production are removed, that could result in increased food production that would see the reduction of household food insecurity and poverty.

Do I have to be in this research and may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalised or lose any benefits to which you otherwise qualify.

Is any assistance available if I am negatively affected by participating in this study?

This research will not expose you to any harm as a result of your participation.

What if I have questions?

If you have any questions feel free to contact Patience Masimba Simango, the researcher, at 180 Main Road, Kalk Bay, 7975, Cape Town, South Africa. My phone number is 0027 785702968 and my e-mail address is patiencemsimango@yahoo.com

If you have any questions about the research study itself, please contact my supervisor Dr. Dinbabo at The Institute for Social Development (ISD), University of Western Cape. His telephone number is 0027 219593858.

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Professor Julian May
Head of Department: Institute for Social Development
School of Government
University of the Western Cape
Private Bag X17
Bellville 7535

This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics Committee.

C. INFORMATION SHEET (Semi-Structured Interviews for Extension Officers)

Project Title: An Assessment of Women's Participation in Agricultural Production: A Case Study of Marange Irrigation Scheme in Zimbabwe.

What is this study about?

My name is Patience Masimba Simango, a student at the University of Western Cape in South Africa. I am conducting a research to investigate the nature and the extent of women's participation in agricultural production. It is envisaged that the results of this study will assist agricultural policy makers, rural development practitioners and other interested stakeholders with information that might improve women's participation in agricultural production. In view of this, I am inviting you to participate in this research project because you are an extension officer at Marange Irrigation Scheme and your ideas and opinions will be of great value to this study. Your participation and input will be highly appreciated.

What will I be asked to do if I agree to participate?

If you agree to participate in this research project, you will be asked to answer questions that provide information about agricultural services you offer; participation of female farmers in extension programmes; challenges and potential in irrigation farming and sustainability of the irrigation project. The interview will take about 45 minutes to one hour and will be held at a place of your choice.

Would my participation in this study be kept confidential?

All your personal information, including your name will be kept confidential and will not be disclosed to anyone. Only pseudonyms will be used in the final report and in all published reports to protect your privacy. Your identity will be protected to the maximum extent possible.

This research project involves making audiotapes and photographs of you. The interview will be audiotaped so that I can accurately transcribe the conversation. All information obtained from the interview will be treated with strict confidentiality and will be used for research purposes only. The audiotapes, photographs and interview notes will be kept securely in a locked file cabinet in my study room that will only be accessed by me. Furthermore, you and I will be asked to sign a consent form that binds me to keep to what we would have agreed upon.

What are the risks of this research?

There are no known risks associated with participating in this research project.

What are the benefits of this research?

This research is not designed to help you personally, but the results may help the investigator learn more about the degree to which women participate in agricultural production, the problems and the prospects that they face. It is hoped that this study will allow policy makers

and development practitioners to have a deeper knowledge and understanding of the challenges facing female farmers and to come up with informed and better ways of improving women's participation in agriculture. It is felt that if obstacles that prevent women from participating fully in agricultural production are removed, that could result in increased food production that would see the reduction of household food insecurity and poverty.

Do I have to be in this research and may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalised or lose any benefits to which you otherwise qualify.

Is any assistance available if I am negatively affected by participating in this study?

This research will not expose you to any harm as a result of your participation.

What if I have questions?

If you have any questions feel free to contact Patience Masimba Simango, the researcher, at 180 Main Road, Kalk Bay, 7975, Cape Town, South Africa. My phone number is 0027 785702968 and my e-mail address is patiencemsimango@yahoo.com

If you have any questions about the research study itself, please contact my supervisor Dr. Dinbabo at The Institute for Social Development (ISD), University of Western Cape. His telephone number is 0027 219593858.

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Head of Department: Institute for Social Development
School of Government
University of the Western Cape
Private Bag X17
Bellville 7535

This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics Committee.

D. INFORMATION SHEET (Questionnaire for Female Farmers)

Project Title: An Assessment of Women's Participation in Agricultural Production: A Case Study of Marange Irrigation Scheme in Zimbabwe.

What is this study about?

My name is Patience Masimba Simango, a student at the University of Western Cape in South Africa. I am conducting a research to investigate the nature and the extent of women's participation in agricultural production. It is envisaged that the results of this study will assist agricultural policy makers, rural development practitioners and other interested stakeholders with information that might improve women's participation in agricultural production. In view of this, I am inviting you to participate in this research project because you are a female farmer at Marange Irrigation Scheme and your ideas and opinions will be of great value to this study. Your participation and input will be highly appreciated.

What will I be asked to do if I agree to participate?

If you agree to participate in this research project, you will be asked to fill in a questionnaire designed to assess agricultural productivity, accessibility to agricultural productive resources and services and the level of women's participation in agricultural activities. It will take about 45 minutes to one hour to fill in the questionnaire.

Would my participation in this study be kept confidential?

All your personal information, including your name will be kept confidential and will not be disclosed to anyone. Only pseudonyms will be used in the final report and in all published reports to protect your privacy. Your identity will be protected to the maximum extent possible. This research project involves making audiotapes and photographs of you. All information obtained from the interview will be treated with strict confidentiality and will be used for research purposes only. The questionnaires will be kept securely in a locked file cabinet in my study room that will only be accessed by me. Furthermore, you and I will be asked to sign a consent form that binds me to keep to what we would have agreed upon.

What are the risks of this research?

There are no known risks associated with participating in this research project.

What are the benefits of this research?

This research is not designed to help you personally, but the results may help the investigator learn more about the degree to which women participate in agricultural production, the problems and the prospects that they face. It is hoped that this study will allow policy makers and development practitioners to have a deeper knowledge and understanding of the challenges facing female farmers and to come up with informed and better ways of improving women's participation in agriculture. It is felt that if obstacles that prevent women from participating fully in agricultural production are removed, that could result in increased food production that would see the reduction of household food insecurity and poverty.

Do I have to be in this research and may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalised or lose any benefits to which you otherwise qualify.

Is any assistance available if I am negatively affected by participating in this study?

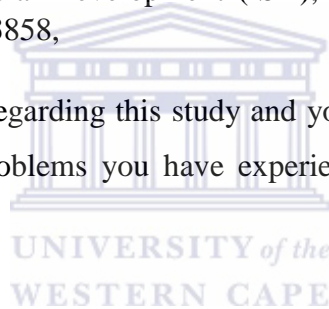
This research will not expose you to any harm as a result of your participation.

What if I have questions?

If you have any questions feel free to contact Patience Masimba Simango, the researcher, at 180 Main Road, Kalk Bay, 7975, Cape Town, South Africa. My phone number is 0027 785702968 and my e-mail address is patiencemsimango@yahoo.com

If you have any questions about the research study itself, please contact my supervisor Dr. Dinbabo at The Institute for Social Development (ISD), University of Western Cape. His telephone number is 0027 219593858,

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:



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