

DURBAN UNIVERSITY OF TECHNOLOGY

**WOMEN PARTICIPATION IN DECISION-MAKING IN AGROFORESTRY IN
UMVOTI MUNICIPALITY**

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**WOMEN PARTICIPATION IN DECISION-MAKING IN AGROFORESTRY IN
UMVOTI MUNICIPALITY**

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ABSTRACT

The study investigated the extent to which women in Umvoti Municipality participate in decision-making in Agroforestry. The study focuses on women's participation in the decision-making in AF in Umvoti Municipality. Its purpose was to explore what was happening intending to improve the participation of women in the decision-making in AF. The study adopted a qualitative approach, which was followed by the data generation, carried out from February 2019 to July 2020, where a sample of thirty-six (36) black women participants were randomly and purposely selected from six different wards. The selected wards were Shane, Ntembisweni, Matimatolo, Mbulwane, Enseleni and Nhlalakahle covering approximately 60% of Umvoti Municipality's total population. The survey was based on women who were participating in AF but experiencing exclusion from decision-making and their willingness to participate in the survey exercise. Twenty (20) women participants were selected for observation and focus group discussions and sixteen (16) women participants were selected for individual interviews. Data were generated from six wards. A semi-structured questionnaire was developed to capture the data on the socio-economic status of participants and to identify their extent of participation in decision-making in AF. The semi-structured questionnaire consisted of socio-economic information like age, educational status, number of family members and income generation. Thematic analysis was employed to analyse data generated from different selected women participants. The data generated and analysed from participants reflected that the highest proportion of the women had a high level of participation in AF practices. Further, some women had medium and low levels of participation. The highest proportion of women who participated in AF practices were those that realized the importance and benefits of AF practices and considered AF practices as the sole manner to sustain their households' livelihood, hence Umvoti women have no other option except AF practices. The study revealed that the women's income generated from other resources is

frequently spent on their household activities. Consequently, marketing of harvested AF products, children's education, household chores and childcare, work distribution, protection and management of livestock were identified as the potential sources of women's income. Further, the study realised that women played substantial activities in fulfilling their household's family needs by involving themselves in various job activities. Thus, the introduced AF components preferred by women must be practiced sustainably to generate higher benefits to empower women, and their contribution to AF should be encouraged. The existing empirical evidence on the degree to which women participate in AF decision-making, reveals that women comprise about 43% of the AF labour force worldwide and proceed to increase by 44,2% with a contribution of about 2 % growth in Gross Domestic Product (GDP) in developing countries.

DECLARATION

I, **Sipho Sikhumbuzo Masuku**, declare that this doctoral thesis with the title “Women’s Participation in Decision-making in Agroforestry in Umvoti Municipality,” submitted to the Durban University of Technology is my original work and has not been submitted before to any other degree or examination in any other university. All sources of materials for this thesis have been fully acknowledged by means of a comprehensive list of references.

15/08/2023

S.S. Masuku

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List of Acronyms

AF.....	Agroforestry
AsgiSA...	Accelerated Shared Growth Initiative for South Africa
BBBEE...	Broad-Based Black Economic Empowerment
BPA.....	Beijing Platform for Action
AFLI.....	Agroforestry for Livelihoods of Smallholder Farmers
CEDAW...	Convention on the Elimination of all forms of Discrimination Against Women
CIFOR.....	Center for Institutional Forestry Research
CRDP.....	Comprehensive Rural Development Programme
CRSA.....	Constitution of the Republic of South Africa
CSW.....	Commission of Status of Women
DAFF.....	Department of Agriculture, Forestry and Fisheries
DTL.....	Department of Trade and Industry
FAO.....	Food and Agriculture Organization
FFH's.....	Female-Headed Household
ICRAF.....	International Council for Research in Agroforestry
IDP.....	Integrated Development Plan
IFAD.....	International Fund for Agriculture
IFPRI	International Food Policy Research Institute
ISRDS.....	Integrated Sustainable Rural Development Strategy
GAD.....	Gender and Development
GDP.....	Gross Domestic Production
GEAR.....	Growth, Employment and Redistribution
GNP	New Growth Path
LED.....	Local Economic Development
MDGs.....	Millennium Development Goals

NDP.....National Development Plan
NEPAD.....New Partnership for Africa’s Development
NPC.....National Planning Commission
PLF.....Public Land Forestry
PPB.....Partner Plus Benefits
PS.....Pilot Study
RDP.....Reconstruction Development Programme
RSA.....Republic of South Africa
SADC.....South African Development Community
SDGs.....Sustainable Development Goals
UNESCO.....United Nations Educational, Scientific and Cultural Organisation
USAID.....United States Agency for International Development
UNICEF...United Nations International Children Emergency Fund
WAD.....Women and Development
WID.....Women in Development
WFP.....World Food Programme

CHAPTER 1

INTRODUCTION AND CONTEXT

1. 1. Introduction

This chapter introduces the study context, problem statement, rationale, study objectives, research questions, and organizational structures. This qualitative study explores women's participation in agroforestry (AF) decision-making in Umvoti. Women in rural areas play a significant role in AF practices, but their valuable contribution to AF decision-making is not recognized (Akhtar, Ahmad, Yousaf, Zafar, and Raza 2018).

Historically, women are the custodians of agricultural practices, and they have demonstrated great knowledge and experience in farming practices (Johnson et al. 2019; SOFA 2011). Women play a fundamental role in various fields of AF including the conservation of fundamental elementary support programmes including the land, water, trees and animals (Johnson et al. 2019; SOFA 2011).

Even though women in rural areas are approximately half of the population, they, however, are discriminated and disadvantaged (Akhtar, et al. 2018). Further, their significant contribution to AF practices and household chores has been neglected and ignored, and their endeavours are not reflected in the AF practice statistics (Johnson, Gerber, and Muhoza 2019).

Normally, women practice AF under severe and adverse conditions, and they withstand social, religious, and cultural obstruction and discrimination (Johnson et al. 2019).

Furthermore, the study outcomes from most of the developing countries reveal that women extremely contribute to AF and rural economies in all developing countries.

Women's roles and responsibilities differ substantially among the regions and are dynamic worldwide, based on the economic and social factors that are transforming the AF sector (SOFA 2011). However, despite those economic and social factors transforming the AF sector worldwide, women's participation in the design and decision-making in AF is ignored.

Women are neglected even though they rely extensively on AF practices to sustain their livelihoods (Akhtar et al. 2018). Women of Umvoti municipality are still depending on food crop production, where they plant vegetables and cash crops for firewood and building material to sustain their livelihoods.

The recognition of women's circumstances in development programmes has been globally realized as a significant contributing factor to alleviating poverty and hunger (Doss 2011). The inclusion of women's decision-making in development was a priority theme during the women's conference in Beijing in 1995. Those who supported development financially were involved in policy-making or were government officials who participated in this Conference (Doss 2011).

Generally, they echoed the vital role of women's participation in development. However, the involvement of women in decision-making in agroforestry has mainly been ignored (Doss 2011). Participation is the process of individual participation in different societal mechanisms to express their views and opinions.

This process enables women to make informed decisions and access skills and knowledge for sustainable livelihoods.

Decision-making is the process of choosing between or among different suitable options to reach an informed conclusion for future implementation and execution (FAO 2012). Agroforestry (AF) is a farming system that integrates crops, trees, and livestock in one plot of land (Tewari 2008).

FAO (2015) defines "Agroforestry as a collective name for land-use systems and technologies where woody perennials (trees, shrubs, palms, bamboo, etc.) are deliberately used on the same land management units as crops and or animals, in some form of special arrangement or temporal sequence."

The study was conducted in Umvoti Municipality to determine the extent of women's participation in decision-making in AF. The women, who participated in this study, were older than forty years (40yrs) and have been practicing AF for more than three years. World Bank (2007; IFPRI 2007) affirmed that a well-performing agricultural sector is fundamental in addressing hunger, poverty alleviation, and inequity by attaining the Sustainable Development Goals.

Most African countries, including South Africa, depend mainly on agriculture to achieve economic growth (FAO 2006). The rapidly increasing population in Southern Africa has worsened the economic challenges and the increase in food has resulted in a tremendous amount of pressure on the land base. This increasing population has resulted in the over-utilization of the land through agricultural activities (NEPAD 2003; Meijer, Sileshi, Kundhlande, Catacutan, and Nieuwenhuis 2015).

This process enabled the women to make informed decisions and access skills and knowledge for sustainable livelihoods.

There was a compromise that gender dissimilarities in the extent of ownership and access to assets, land tenure systems, education, extension, and health have contributed to lesser agricultural productivity and advanced poverty levels (Peterman, Behrman and Quisumbing 2010).

However, given that gender substance in all production domains, much has been documented based on gender subjects of agricultural output. Alternatively, IFAD (2003) contests that, very minor is understood about women's role in decision-making in AF. Quisumbing and Pandolifelli (2010), assert that very little is recognized about AF practices and their adoption.

This study intends to fill the gaps by synthesizing women's participation relative to men in various AF practices across sub-Saharan Africa. AF practices provide about 70 per cent to 80 per cent of employment and 40 per cent of Africa's export earnings (Meinzen-Dick et al. 2010). Thus, this has resulted in most smallholder farmers, particularly women, being in a state of poverty, where they cannot afford industrial inputs to improve their yields.

This study also intends to analyse the relationship between tree farming and socio-economic factors such as household size, age, education level, and sex of household heads.

Further, the study examined access to land, land rights, extension services, capital, crop yield, and household income to understand the local economy.

Thus, in this premise, this study endeavours to understand the processes and strategies which are in place to enhance women's participation in decision-making in agroforestry and make recommendations for improvement. Different methods of data generation such as observation, focus group discussions, and interviews were used.

Data analysis was done thematically by organizing data into response patterns, referred to as open coding, axial coding, and selective coding (Army 2009). The qualitative approach enabled the researcher to understand what was happening regarding the participation of women in decision-making in AF and to make recommendations to improve their participation.

The study will hopefully, contribute to the training of women's involvement in agroforestry decision-making. Although there are various definitions of agroforestry from different scholars. The most recent definition is that AF is a dynamic, ecologically based, natural resource management system that, through the integration of trees on farms and agricultural landscapes, diversifies and sustains production for increased social, economic, and environmental benefits for land users at all levels (FAO 2015; Meijer et al. 2015).

This definition suits well with this study; hence, the study seeks to investigate the extent to which women participate in making decisions in AF practices.

Nair, Whittall, Hughes, Craig, Revell, Miller, Powell, and Auricht, (2010; Tewari 2008) contest that AF combines sustainable land use methods and knowledge where trees or shrubs, livestock, and crops are intentionally combined on a similar piece of the land management unit.

The distinction between this system and other AF systems is that mechanisms' physical and biological relations are intensively accomplished (Missouri Centre of Agroforestry 2013). African countries frequently depend on agriculture and forestry to sustain their livelihoods and accomplish their economic growth (FAO 2006). Nonetheless, a sustainable agricultural sector addresses hunger, poverty, and inequality.

In addition, in the Southern African countries, the commercial challenges are deteriorating by the fast aggregated population and the increased demand for food that has caused an excessive burden on the land base (NEPAD 2003). During the Beijing conference in 1995, an argument on a sustainable agricultural sector as central to addressing hunger, poverty, and discrimination rose (World Bank 2007; IFPRI 2007).

The idea was that those could be achieved through the attainment of the Millennium Development Goals by 2015. A large number of countries in Southern Africa depend on agriculture to achieve economic growth (FAO 2006). However, this has caused significant numbers of smallholder farmers, including women, to be in a state of poverty, where they lack sufficient funds for industrial input to advance their yields.

Further, in Southern Africa, the rapidly increasing population worsens the economic challenges and the demand in the increase for food, resulting in a tremendous amount of pressure on the land base (NEPAD 2003). The increasing population results in the over-utilization of the land through agricultural activities. Thus, this study looks at the different aspects of women's participation in decision-making and their contribution to AF production.

Women's contribution to AF production is highly essential, but this cannot be quantified accurately (Thompson and Sanabria 2010). Therefore, rural women should account for a large quantity of decision-making regarding socio-cultural issues that affect their daily lives. Thus, it is impossible to respond to the questioning of women's contribution to AF production with any extent of accuracy.

Although there is a perception that women can portray various and broad scopes of their participation in decision-making, most of which are informal, men recognize those informal avenues of decision-making. Still, they are not bound by those decisions made by women (Kiptot, Franzel, and Degrande 2014).

Largely, women portray different decision-making methods to recognize their views and opinions. In developing countries such as Tanzania, Kenya, Nigeria, Zimbabwe, and South Africa, land has been an issue from pre-colonial to post-colonial times (Kiptot et al. 2014).

Gender disparities regarding land and land tenure rights, the use, management, and control over the land as part of resources, have been regarded as having a significant impact on African women.

Most African countries are experiencing accelerative people concentration that impacts land abasement and bad environmental conditions (Kiptot et al. 2014). Thus, agroforestry practice has demonstrated the potential to modify farming systems and enhance food security. The contribution of women's involvement in food security through women's participation in decision-making regarding AF (Kiptot et al. 2014).

Women are constrained in decision-making; hence, their involvement in decision-making is required. However, it is crucial to understand how decisions are made in AF practices to sustain household livelihoods through food security. The value of increased understanding of the extent to which women make decisions in AF.

Thus, women's roles should be prioritized and recognized to ensure that an advanced level of fluctuation in time and attributes in the form of household decision-making and allocation of resources required are more effective.

The household decision-making engagement contributes to sustainable AF activities such as food security and environmental sustainability (Kiptot et al. 2014).

Thus, this study considered social, economic, and cultural factors that significantly impact women's participation in decision-making in AF.

1. 2. Statement of the Problem

Women in rural areas are experiencing constraints in participating in decision-making in agroforestry practices, even though they overwhelmingly participate in agroforestry practices (Meijer, Seleshi, Kundhlande, Catacutan, and Nieuwenhuis 2015; SA News 2017). However, their participation in decision-making in AF is a crucial factor to ensure that country's food security demand is accomplished.

Rural women do participate in agroforestry practices even though they are experiencing serious obstructions and are subjected to discriminatory practices (Meijer et al. 2015; SA News 2017). Thus, it is essential to determine those critical obstructions against women's participation in decision-making in agroforestry, to enhance advanced agroforestry production. This will influence women's active participation in decision-making in agroforestry practices and enable them to participate in decision-making in agroforestry.

The international development community has realized that agroforestry (AF) is an engine for growth and poverty reduction in countries where it is the main occupation of the poor (Gandhi 2016; Huerta 2017). However, a growing concern about improving women's role, influence in AF institutions and organizations to create situations where their voices can be heard in the decision-making process has been acknowledged.

The recognition of women's involvement in making decisions in AF processes is crucial (Gandhi 2016; Huerta 2017). Evidence has shown that the crucial aspect of social organizations, formal and informal rules in ensuring that both women and men have access to, and land tenure rights and control over natural resources is still lacking.

Literature on gender in AF frequently undervalues the role of women, since the importance is regularly on formal institutions, rather than informal decision-making processes (Rachel 2014; Gandhi 2016; Huerta 2017). Women in rural communities in developing countries are still under development, and frequently undertake the caretaker's role for their relatives and families. In other developing parts of the world, women depend mostly on AF-related activities (Rotich, Sirmah, Mengich and Odwori 2017).

Notwithstanding, women's participation in AF activities enhances their households well-being. This determination comprises AF products such as fuelwood collection, building and fencing material, food security, and livestock fodder (Team and Doss 2011). Numerous land uses exert various levels of reimbursement and benefits to the community through the establishment of positive and negative externalities such as soil erosion and natural resource degradation.

Women's involvement in AF decision-making can impart their understanding of appropriate rural development objectives, which might ease their acceptance of participation in AF decision-making processes. This has been recognized as extremely low in various sub-Saharan African countries (Fletcher 2016).

An attempt to escalate women's understanding of AF as economically appropriate land use has been made, but its economic realization as a competitive land use from private and social perspectives has not been exhaustively deliberated.

In developing countries, women are still constrained in access to land and land rights tenure, which contributes to their lack of decision-making (George, Olokoyo, Osabuohien, and Efobi 2014). Customary laws and traditional laws still mandate men, as the household heads, access the land and have the right to control natural resources. Women are regarded as minors and are usually portrayed as insignificant.

Women are excluded from the development processes, and resources policies, which is fundamental for them to increase their access to land and land right.

Literature reflects that in developing countries such as Zimbabwe, Kenya, Tanzania and Zambia, women have been able to access the land through land reform programmes (Malik 2018; UN Women 2022).

The involvement of rural women in these land policies was well-defined, which enabled women to ensure equal access to land. The land policy has to be based on the principles of gender equality in access to land, and have clear objectives or goals on equal access to land and have indicators and baseline data to enable follow-ups, where the government has endeavoured to embark on the process of addressing black women farmers issues (George et al. 2014).

These initiatives include amongst others, the most previously disadvantaged and vulnerable groups of society, particularly women and children who are receiving poor or low-quality education, have high unemployment rate and experience low pay and fewer job opportunities. In this context, the government commenced creating opportunities that could contribute to poverty eradication in poor rural communities (George et al. 2014).

Although women succeeded in acquiring education and entering the decision-making mainstream in some cases, they are still marginalized by institutional settings that prioritise men's needs and situations while ignoring women's diverse needs and experiences. Rotich et al. (2017) attest that eight Millennium Development Goals (MDGs) global leaders committed themselves to halving extreme hunger and poverty.

The potential benefits of trees to poverty alleviation and fighting against hunger are reflected through the provision of tree products such as fuelwood, pole production, timber, and soil mulching, fodder, land separation, cultural rights climate change mitigation effects (George et al. 2014; Falola 2017).

Agroforestry practices are regarded as an essential component of strategies to achieve anticipated objectives of poverty alleviation and fighting against hunger. The literature demonstrates that women in the developing countries spend prolonged hours on daily basis performing backbreaking and labour exacting operations in all AF production (FAO 2013; FAO 2014).

It has been realised that there is very limited information documented about women's involvement in making decisions in AF. Therefore, it is extremely difficult to conclude who makes decisions and in which areas, hence this study seeks to explore the extent to which women participate in decision- making in AF.

1.3 Study Objectives and Research Questions

1.3.1 Study Objectives

The study aimed at investigating how women participate in decision-making in Agroforestry in Umvoti Municipality.

The objectives of the study are:

1. To examine the nature of women's participation in decision-making in agroforestry in Umvoti Municipality.
2. To examine how women learn about agroforestry decisions.
3. To explore educational processes and strategies that can be used to enhance women's participation in decision-making in agroforestry.

1.3 2. Research Questions

The study sought to provide answers to the following questions:

1. What is the nature of women's participation in decision-making in agroforestry in Umvoti Municipality?
2. How do women learn about agroforestry decisions?
3. What are the educational processes and strategies that can be used to enhance women's participation in decision-making in agroforestry?

1.4. Significance of the Study

The study will contribute positively to the accomplishment of the Government's creativeness in understanding the nature of women's participation in decision-making in agroforestry (AF) and in enhancing the socio-economic livelihood of rural poor communities. The South African Government embarked on various improvement programmes since 1994, and this study can be used to complement one or other procedures toward sustainable rural growth in the country.

The data generated from this study will contribute to the pull of knowledge, which will be valuable to develop AF recommendations that can hypothetically increase the normal existing and equivalence of the Umvoti municipality rural community. Further, the outcomes of the study will add value to social experts, community development workers, and government agencies that are generally concerned about aggressive hunger, poverty alleviation, job creation, and economic growth in rural areas.

The outcomes of the study augment AF strategies, processes and studies that are currently in place for women's participation enhancement in decision-making in AF at all levels. This study will be used as a guideline in the policy initiatives in promoting AF practices for poverty alleviation and climate change mitigation measures.

It will also contribute to the creation of a conducive environment for women in the issues of women's oppression and inequality. Future implementation of the study results will afford opportunities for job creation specifically for women, untrained labour and jobless workers and escalation of fuelwood for local consumption, small-scale timber growers for housing and marketing purposes and fodder for livestock in Umvoti.

The study will further contribute positively to the improvement of current processes through the development of more inclusive AF strategic plans to enhance women's participation in decision-making in this field to meet the mandate of food security and income generation through AF initiatives.

The generated data on the role of women's participation in decision-making in AF will be useful as a basis for policy-making and programme development, as well as better-informed AF programme implementation. The study will further suggest the special measures which need to be considered by the government to ensure that women participate in decision-making in AF practices and that processes are reflected in the South African Agroforestry Strategic Plan, which will benefit women farmers.

The study findings may improve the understanding of the Department of Agriculture, Forestry and Fisheries (DAFF) on the importance of women's participation in decision-making in AF. This can also provide the South African Broad-Based Black Economic Empowerment (BBBEE) organization with the necessary information to promote the effectiveness of women's participation in decision-making.

1.5. Study Limitations

Study limitations always form part of the research survey. However, it is crucial to minimize them to enable the research quality. The researcher had constraints in time, financial support and the human relationship with the participants. The lack of assistance from the staff in the study area because of confidentiality and participants' privacy was a limitation. The Departmental staff and municipality were always occupied with their official tasks and this added more pressure on the researcher to his extra massive workload.

The researcher's colleagues were supportive and assisted the researcher and afforded him the privilege of checking all departmental responsibilities. The researcher's interaction with women farmers posed challenges of familiarity, contributing to women participants providing information, that their husbands perceived, was interested in, and potentially presenting preconception.

The generalization of study outcomes caused by random and purposive sampling was a limitation. Transferability necessitated the consideration of the understanding that the outcomes might be restricted to related circumstances.

The study used AF practices as a basic unit of analysis that described household farming producing food crops for domestic consumption and to a less extent selling to local markets. The study used assumptions that women farmers were national and made management decisions to maximise economic returns. However, these assumptions may not hold the truth in the case of rural women farmers in the Umvoti Municipality.

The limited number of women participating in AF activities were experiencing constraints in participating in decision-making because of their various education levels. In this context, women in Umvoti assumed producers who produced food crops to sustain their households. The weakness of supportive institutions at local levels was a major study limitation.

On account of the area's remoteness, the lack of policy prescriptions for institutional development in agriculture and forestry has failed to recognize the role that women farmers and social relations play in creating and reproducing supportive institutions at local levels. Despite women's active role in AF in Umvoti, there is insufficient information available regarding their participation in decision-making.

Further, the lack of information on gender-disaggregation on challenges specific to women farmers was a limiting factor. The study on women's involvement in AF in Umvoti municipality was carried out only in six wards, yet Umvoti municipality consists of eleven wards, therefore, the outcomes of the investigation cannot be generalized to the entire municipality.

1.6. Organization of the Thesis

This thesis is organized into seven chapters. The first chapter provides the general introduction, and the study context, problem statement, study objectives, research questions, motivation, focus and purpose of the study, rationale, limitation of the study, and organization of the study.

The second chapter discusses the perspective on women's participation in the agroforestry decision-making process. The third chapter describes the concept of women's nature participation in decision-making in agroforestry as the crucial requirement for women's accomplishment of sustainable development. The fourth chapter presents the research methodology, design and approach.

The fifth chapter presents and discusses the research findings, which addresses the study question. The sixth chapter discusses women's learning about agroforestry decisions and educational processes and strategies enhancing women's participation in decision-making. The seventh chapter presents conclusions and recommendations.

CHAPTER 2

PERSPECTIVES ON WOMEN'S PARTICIPATION IN THE AGROFORESTRY DECISION-MAKING PROCESS

2.1 Introduction

The previous chapter discussed the introduction and background of the study. The chapter presented other related matters that have an impact on women's participation in decision-making in AF. This chapter discusses the conceptual framework and the literature reviewed for this study. The chapter presents what is known about the issue from the theoretical discussions and prior studies, thus providing the background and demonstrating the need for the research.

The literature reviewed includes studies conducted locally, globally, and internationally, from historical publications (from colonial times onwards), agro-economic reports from various institutions, insights from Agroforestry (AF) research, feminism, and participatory theories and approaches. Most of the sources consulted are recent, but the study referred to primary sources from the 1980s and earlier because they contain pertinent information unavailable in contemporary sources.

Literature on AF is limited since the availability and accuracy of AF-related research from African countries and historical data post-apartheid era is inadequate.

Publications, journals, and articles from different resources such as Food and Agriculture Organization (FAO), Center for Institutional Forestry Research (CIFOR), and International Council for Research in Agroforestry (ICRAF), have theoretically been used to analyze AF and the factors that influence it.

Although AF practices commenced in the 1800's in other developing countries, in South Africa, it was introduced in the 1980s by forestry companies that identified the need to provide firewood and building material to local households. Women were excluded from practicing AF because of the customary and traditional laws that denied them an opportunity to participate in the decision-making processes.

Thus, there is scarcely any detailed information available on the actual state of AF in South Africa (SA). The literature in South Africa is very scarce on women's participation in decision-making in AF. However, there are good historical sources on agriculture in developing countries such as Zimbabwe, Uganda, Kenya, Nepal, and Tanzania during the colonial period. Still, the search could not find comparable information for South Africa.

Information on Zimbabwe, Nepal, Tanzania, and Kenya is better documented than other countries from the literature reviewed. Therefore, this literature review explores the processes, strategies, and studies, which analyze the extent to which women appear to participate in decision-making in AF in different contexts.

2.2. Women and participation in the AF decision-making process

This provides an overview of women's participation in decision-making in agroforestry, from global, national, and regional perspectives. This enabled the researcher to compare the extent and nature of women's involvement in development, particularly in agroforestry practices globally at all levels (Mulyoutami, Martini, Khususiyah, Isnurdiansyah, and Suyanto 2012).

This section reflects how women participate in decision-making in AF in various contexts, globally, regionally, and nationally. Understanding women's roles and household chores is critical for connecting knowledge with justifiable growth (Mulyoutami et al. 2012).

Various literature from developing countries reveals that women are at the forefront of AF practices and they have demonstrated the creation of farming science. Women have demonstrated a crucial role in the provision of fundamental assistance systems such as land, and water in rural areas (Mulyoutami et al. 2012; Faisal 2018).

Women have different considerations and abilities about AF practices, which affect their AF practices leading to diverse consequences and influences. Women's roles in various countries such as South and Southeast Sulawesi are corresponding because of their comparatively democratic social arrangement. Participation in decision-making in AF practices is perceived as a comprehensive concept that means different things to different people (Faisal 2018).

In this study, participation was used to determine how women make decisions in AF at different levels. People with diverse conceptual positions, which provide various connotations, frequently used the term participation (Faisal 2018). It is worth noting that participation is an ideologically challenged perception, which produces multiple challenging purposes and applications.

Faisal (2018) asserts that the outcome varies from diverse views on how participation is well defined, anticipated to be involved, expected to be achieved, and brought about. However, the feelings and concepts of women participation and authoritative thoughts result to misunderstanding on what is anticipated and democratic development process.

It is imperative to realize that women have diverse ranges and levels of information that appraise their activities and measurements to abstract, accomplish, and have their natural resources protected (Faisal 2018). Women have more challenges in achieving and safeguarding their natural resources.

2.3. The extent of women's participation in decision-making in agroforestry

Literature has primarily focused on women's participation in the private domain, where time forces many of them to start cottage industries, such as handicrafts. Cottage industries are characterized mainly by low returns and limited potential for expansion (Catacutan and Naz 2015).

Considering that gender aspects in AF should be a priority, the need to ensure that women are not marginalized in AF interventions are also a priority.

Women farmers, globally, are known to have played significant roles in AF, particularly in food crop production and tree establishment and maintenance (Catacutan and Naz 2015).

There is very little documentation about women's participation in decision-making in all countries, including Vietnam. Agroforestry emerged as a sustainable land-use management practice addressing land degradation and soil fertility loss and encouraging smallholder farmers and women to embark on AF practices (FAO 2013).

Moreover, approximately 1.2 billion women derive their livelihoods from AF hence; they are regarded as an integral part of AF. Women are frequently responsible for food crop production and managing trees, especially at the early stages of the establishment (Kiptot, Franzel, and Degradé 2014).

Women are principal holders of knowledge and managers of home gardens. However, there is an estimation that women constitute about 60 per cent of innovative AF practices such as domesticating indigenous fruit trees and producing dairy fodder (Kiptot et al. 2014).

The agroforestry for Livelihood of Smallholder Farmers (AFLI) project commissioned a study on a household socio-economic baseline survey in northwest Vietnam (Catacutan and Naz 2015). The study examined women's participation in decision-making in AF, benefits from AF, control and access to productive resources, and the factors affecting AF adoption.

The outcomes of the study in Vietnam revealed that both men's and women's critical constraints to AF were a lack of technical knowledge on AF technologies, and women ethnic minorities had more restrictions in adopting AF than men. However, this was due primarily to the lack of land, labour, and collateral assets for female-headed households. Women in general, interlinked factors such as a lack of knowledge, low educational levels, and poor access to extension services.

The study revealed that the lack of attention to gender issues limited AF interventions to benefit rural women-headed households (Sarma and Payeng 2012). The small and marginalized farmers, including women, generate income by selling milk from their cattle and dairy products to purchase seeds, fertilizers, and other agricultural inputs for crop production.

The role of rural women in the agriculture and livestock sector is always neglected, and women are further denied their status as active producers in these sectors (Sarma and Payeng 2012). Women provide 85 per cent to 90 per cent of the period spent on household food processing and preparation across the countries (Kiptot et al. 2014).

The study suggests that AF interventions should promote practices that cater to labour-scarce female-headed households, provide preferential credit access to female-headed households, channel extension support to women's associations, and produce extension material in the local language that is understandable to local women and communities.

Further studies from developing countries revealed that the benefits of women's involvement in AF and their access to resource management influence their marginalization from AF practice (Catacutan and Naz 2015; Fontana and Natalia 2008). The study revealed that women have extreme recognition knowledge about various tree species and management for various uses of specialized trees and forests.

Despite women's wisdom, they are frequently deprived owing to interconnected socio-economic, cultural, and institutional reasons. In addition, women's ability mostly tends to be connected to domestic food consumption and health, which is significant throughout food crises (FAO 2013).

Catacutan and Naz (2015) affirm that considering gender aspects in AF should be a priority, to ensure that women are not marginalized in AF interventions. Moreover, despite this significant role of women, men have reportedly continued to dominate decision-making, even if women are the largest providers of farm labour (Sarma and Payeng 2012).

This could be counter-productive because there is bound to be conflict when women, as key players, carry out farm tasks without being part of the decision-making process, especially when the decisions fail to recognize their other household responsibilities.

The study aimed at contributing to the understanding of the variation in inter and intra-cultural practices of AF systems through the identification of women's various roles in Umvoti to find out what benefits women derive currently from the other techniques in AF systems, and understand their participation in decision making in AF.

There is no proper and proportional participation of women in the development and decision-making of AF (Kaphle 2011). Therefore, interventions are done to understand traditional and non-traditional AF practices accessible to women and focus attention on research.

There is clear evidence that women do not participate in lucrative agroforestry practices. Instead, they are limited to low-income generating techniques (Hebert and Murray 2017). Hebert and Murray's study imply that a better understanding of where and what women do will help to inform how women can participate in a broader range of lucrative activities and decision-making about what, where, and how to practice agroforestry.

The study identified gaps in the policies and women's participation in decision-making in AF. Policies must be based on sound data and gender analysis. This has not been done in SA because AF has never been considered an approach, that contributes to poverty alleviation and food security. Hebert and Murray (2017) affirm that potential approaches contribute positively to AF scaling up poverty and food security, through women's participation in decision-making in AF.

Although there is clear evidence that women do most of the AF work, and often make significant labour contributions to AF, such as planting, weeding, and watering trees, the perception that women can manage AF practices better than men are mixed (Team and Doss 2011). Women's opportunities in the sector are limited to low-return activities that are of little or no interest to men.

There is no empirical evidence reflecting how these activities are decided and how women can participate in decision-making regarding the planning and management of AF. Women have no say in decision-making, particularly, where there is a lack of economic growth (Team and Doss 2011).

AF can be an essential engine to promote economic growth and poverty reduction through employment opportunities and income generation. Illiteracy in Umvoti Municipality is very high. The majority of women who are supporting their families and the breadwinners characterize the majority of the illiterate people in the area (Umvoti IDP 2005/2006).

These women were employed in the local timber plantations and agricultural farms of white farmers in the Greytown and Kranskop areas. Shackleton, Paumgarten, Kassa, Husselman, and Zida (2011) affirm that women are contributing more to forest foods such as wild leaves, fruits, roots, tubers, seeds, nuts, mushrooms, saps, gums, and forest animals and their products (like eggs and honey) to supplement foods produced by agriculture and food obtained from other sources.

There is a perception that hunting and fishing are typically male domains. Simultaneously, women tend to collect edible forest plants, fruits, and medicines, which are considered a private sphere (Shackleton et al. 2011). Women have substantial knowledge concerning identifying and preparing nutritious indigenous foods to improve their households' nutrition and health. Income generated from these activities adds significant value to their households' purchasing power (FAO 2012).

In a woman-headed family, there is an increasingly common social phenomenon, that women have assumed new roles heading their households (FAO 2012). In Umvoti, men migrate to urban areas to look for employment and leave women and children at home to look after the households. A historical process of women undertaking "male" tasks and working in "male" sectors has been reported in several societies, and it is no exception in SA (FAO 2012).

Therefore, this study seeks to understand the implications of this phenomenon concerning women's participation in decision-making in AF. Most studies identified the importance of women's involvement in politics, but failed to address their involvement in decision-making in AF; hence, my research seeks to fill that gap in Umvoti municipality, and no study has used the feminist, or participatory theory, nor Freirean pedagogical approach, instead studies have focused on the adoption of AF technologies.

Furthermore, it is predictable that women comprise 60 per cent of groundbreaking experts' AF practices such as indigenous fruit trees, domestication, and dairy fodder production (World Bank, FAO, and IFAD 2009).

Women comprised 85 per cent to 90 per cent of the time on domestic food dispensation and groundwork throughout the countries.

The literature reflected that Agroforestry for Livelihoods of Smallholder Farmers (AFLI) in northwest Vietnam is focusing on a domestic socio-economic standard aiming at the investigation of the extent to which women participate in decision-making in AF and how they benefit from AF, control, and access they have to provide resources and the issues that impact on AF acceptance.

The investigation outcomes showed that the main challenges to AF were the lack of technical knowledge of AF technologies. Women's traditional components experienced significant challenges in AF acceptance as related to men (Catacutan and Naz 2015). In contrast, female-headed households (FHHs) primarily lacked land, labour force, and collateral assets. Further, women in general, interlinked factors such as the lack of knowledge, low educational levels, and poor access to extension services.

Women make specific contributions to AF value chains, playing a significant role in crafting craft products (Sarma and Payeng 2012). Women primarily generate income for households to sustain their livelihood through the production of other products such as rice, chilli, tomatoes, pepper, and coffee, which they usually sell to the local markets as part of income-generating.

Women are more responsible for selling products with a high subsistence value (Mulyoutami et al. 2012).

Thus, these products are essential for their income generation and, in turn, for their households' well-being and food security. Unfortunately, studies on women's roles in value chains poorly support policy-makers and extension services.

The perpetual lack of gender-disaggregated data hampers the development of policy interventions to address the issue.

In this context, the study suggested that AF interventions should promote practices that provide for labour-scarce female-headed households (FHHs) (Sarma and Payeng 2012). It is imperative that interventions offer preferential credit access to female headed-households (FHHs), channel extension support to women's associations, and produce extension material in the local language understandable to local women and communities.

The lack of attention to gender issues limits AF interventions to benefit rural women-headed households (Sarma and Payeng 2012). This is prevalent in rural communities where women still depend significantly on traditional approaches, such as Umvoti. Small and marginalized female farmers generate income by selling milk and milk products, and they embark on income-generating initiatives to source funds to purchase seeds, fertilizers, and other agricultural inputs for crop production (Sarma and Payeng 2012).

It is imperative to emphasize that rural women's role in AF practices is always neglected, and they are further denied their status as active producers in the agricultural sector (Sarma and Payeng 2012).

Despite these prominent roles, men have reportedly continued to dominate decision-making in AF practices. Nevertheless, this is not exceptional, even in areas where women are the largest providers of farm labour.

This could be counter-productive because there is a conflict when women, as key players, carry out farm tasks without being part of the decision-making process, especially when the decisions fail to recognize their other household responsibilities (Kaphle 2011). It was observed that there was no proper and proportional participation of women in decision-making in AF.

Extra external interventions are required to understand traditional and non-traditional AF activities accessible to women and focus attention on research (UNESCO 2015). This study was conducted to understand the variation in inter and intra-cultural practices of AF systems by identifying different roles played by women in Umvoti.

It is crucial to establish what benefits women derive from the other AF systems, intending to understand their participation in AF decision-making. The prevailing evidence reflects that women do not participate in profitable AF practices. Instead, they are limited to low-income generating techniques.

The study aimed at understanding better what women do to inform how women could participate in the broader range of lucrative activities and participate in decision-making about what, where, when, and how to practice AF. In addition, the study identified gaps in the policies and women's participation in decision-making in AF.

The study policies must be based on sound data and gender analysis. This has not been done in SA because AF has never been considered an approach, that contributes to poverty alleviation and food security. Women are regularly and mostly affected by poverty and are often the first to find survival strategies and change agents (UNESCO 2015).

Women are the subjects of poverty who often reflect inventiveness in the poverty domain and generate solid and innovative actions in the fight against different forms of poverty (UNESCO 2015). Women should play a vital role in poverty alleviation. The study in Africa on women's participation in decision-making in AF from a gender perspective, examining women's involvement in decision-making in comparison to men, revealed that AF has the potential to offer a substantial benefit to women in rural areas (FAO 2012).

The survey encompassed the challenges and successes that women have experienced in AF practices, and it included fodder production and utilization, soil fertility management, woodlots, and indigenous fruit and vegetable production and processing (FAO 2012). Although AF practices offer a potentially substantial benefit to women, this benefit is more on women's participation, and low on men's domain enterprises, such as timber and high enterprises.

Women participate more in domains with little or no commercial value, such as collecting indigenous fruits and vegetables (FAO 2012). In an examination of States parties' reports, the Committee noted that where full and equal women's participation in decision-making in public life, the implementation of their rights and compliance with the Convention improves (UNESCO 2015).

In this context, the nature of women's participation in AF practices sought to be investigated (UNESCO 2015).

Women in many parts of Africa have limited land rights, hence, they do not possess land inheritance rights in matrilineal societies such as Western Ghana, instead, the land is transferred from a deceased husband to his brother, son, or nephew (sister's son) following the decision of the matrilineal clan.

However, the literature talks about women's activities, but not their participation in decision-making in AF, hence a need for this study to focus on women's decision-making in AF (Team and Doss 2011). A new publication that was looking at the gender dimensions of AF practices in Malawi reflected that both men and women play a crucial role in tree planting and tree management decision-making, which has significant implications for the success of AF practices (Langford 2015).

It is a substantial concern that more attention has been provided to the gender dimensions of agriculture and food security activities in the past decade, but has neglected women's participation in decision-making in AF (Langford 2015). Potential approaches contribute positively to AF to scale up poverty and food security through women's decision-making in AF.

There is a lack of empirical evidence on how these activities are decided and no evidence on how women can participate in decision-making regarding the planning and management of AF (Langford 2015).

The feelings about women managing AF projects are mixed. Although there is clear evidence that women do most of the domestic work, they often make significant labour contributions to AF, such as planting, weeding, and watering trees.

Women's opportunities in the sector are limited to low-return activities that are of little or no interest to men, and the women themselves have no say regarding decision-making (Shackleton et al. 2011). Women are contributing more to forest foods such as wild leaves, fruits, roots, tubers, seeds, nuts, mushrooms, saps, gums, and forest animals and their products (like eggs and honey) to supplement foods produced by agriculture and food obtained from other sources.

The illiteracy rate in Umvoti people is very high, especially among women who are supporting, or breadwinners in their families (Umvoti IDP 2005/2006). These women are employed in the local timber plantations and agricultural farms of white farmers in the Greytown and Kranskop areas. The literature primarily focused on how women participate in decision-making in AF in both the private and public domains, where time forces many of them to start up cottage industries, such as handicrafts.

Cottage industries are characterized mainly by low returns and limited potential for expansion, and women who provide precise contributions to AF value chains, are playing a vital role in selling craft products (Team and Doss 2011). A study in Africa on women's participation in AF from a gender perspective revealed that women play a vital role in selling AF products.

The study investigated women's involvement in making decisions in AF compared to men's, and it included the challenges and successes women have experienced in AF practices. The study also revealed that women generate income for households to sustain their livelihoods and sell it to the local markets as part of income generation.

There is clear evidence that women are responsible for selling products with a high subsistence value. These products are essential for their income generation and, in turn, for their households' well-being and food security. However, women's roles in value chains tend to be poorly supported by policy-makers and extension services.

The perpetual lack of gender-disaggregated data hampers the development of policy interventions to address the issue. The study included fodder production and utilization, soil fertility management, woodlots, and indigenous fruit and vegetable production and processing. In addition, AF practices can offer substantial benefits to women in rural areas.

Although AF offers significant potential services to women, this kind of benefit is more on women's participation is low in enterprises that are considered men's domains, such as timber and high enterprises but participate more in domains that have little or no commercial value, such as the collection of indigenous fruits and vegetables (FAO 2012).

There is a perception that women have limited rights to land in various parts of Africa, mainly in matrilineal societies such as Western Ghana. Women do not possess land inheritance rights.

The land is transferred from a deceased man to his brother, son, or nephew (sister's son) following the decision of the matrilineal clan.

Despite women's potential critical role in AF practices in Africa, they remain disadvantaged in both the agriculture and forestry sectors (Agarwal 2010). Cultural, sociological, and economic factors contribute to limited access to resources and decision-making.

Access to land and tree resources, financial credits, extension services, labour, and suitable technology is the potential resources directly related to hindering women's participation in decision-making in AF practices. Women's participation in AF institutions is governed by several factors, such as the proportion in which they are represented (Coleman and Mwangi 2012; Agarwal 2010)

This is evident in Honduras, India, and Nepal. Women's gender councils, age, and education levels on those councils significantly affected their attendance at the meetings and the likelihood of speaking up on critical issues. The study revealed that there was a lack of knowledge and information on AF practices and AF technologies, which contributed to women's marginalization (Agarwal 2010; Coleman and Mwangi 2012).

The lack of information regarding women's participation in decision-making in AF was also a contributing factor to their lack of participation in decision-making.

The study in Vietnam examining the socio-economic and environmental benefits of AF technology in the Nyamagabe District in Rwanda revealed that women were involved in food crop production and tree establishment and maintenance. This was due to women's lack of knowledge, low education level and poor access to extension services (Kiyani, Andoh, Lee, and Lee 2017).

This study's relevance to this research was because it highlights a lack of information about women's participation in decision-making and it shows that women lack essential tools to participate equally. The introduction of AF technology to local women in rural areas was because women were dependent on natural forests, which put natural forests under pressure. This initiative endeavoured to minimize the stress on natural forests and enhance women's livelihoods (Kiyani et al. 2017).

AF practices contributed positively to women's income generation (Kiyani et al. 2017). Women's lack of involvement in AF decision-making proved to have some significant contribution to soil fertility and reduction of forest destruction in the district. However, the lack of skills and technical knowledge, capital, and seed quality denied some female farmers an opportunity to accept new AF technologies (Kiyani et al. 2017).

Women were challenged to take on new AF technologies because of technical knowledge, capital, and seed quality knowledge (Kiyani et al. 2017). Women required some kind of financial subsidies and incentives to improve their technical expertise in AF. The Government of Rwanda made some interventions by introducing incentives to female farmers.

These interventions included, amongst others, the provision of subsidies, regular training, and informal education (Kiyani et al. 2017).

Women farmers were also involved in decision-making processes to increase the number of people who could accept new AF technologies to improve their livelihoods. This study enabled the researcher to understand women's views, beliefs, perceptions, and opinions on how they participated in decision-making processes to accept new AF technologies to enhance their livelihoods.

Although women in East Africa do not always control the earnings from dairy cows, this income generated from these activities offers significant contributions to household income for children's school fees and buying food and clothing (Kiyani et al. 2017).

The available statistics on the frequency of poverty in Nigeria have shown that the urban poverty rate increased progressively from 3 per cent in 1980 to 25.2 per cent in 1996 (Franzel and Wambugu 2007). In rural areas, poverty rose from 6.5 per cent in 1980 to 31.6 per cent in 1996. There was clear evidence that the rural poverty rate was higher than the urban rate between 1980 and 1996.

Approximately, urban poverty rates range between 1980 and 1996 were 22.2 per cent, as against 25.1 per cent for the rural poverty rate during the same period, which confirms that the rural poor are the worst hit by poverty in Nigeria. However, this was due to the marginalization of women from involvement in AF processes.

The current statistics on the poverty rate in Nigeria reflect that the general increase in food prices which occurred between June 2020 and June 2021 has contributed to the increase of the Nigerian national poverty line percentage from 40.1 per cent to 42.8 per cent (The World Bank 2021).

AF practices were critical for most female farmers in rural African countries, including Tanzania and South Africa. The maximum number of female farmers practice AF activities employing traditional methods and approaches (Mbwambo, Saruni, and Massawe 2013). Mbwambo et al. (2013) attest that conventional methods and procedures contribute significantly to the low productivity of conventional production systems, which generally lead to a common standard of living.

The lack of modern knowledge of farming for female farmers has been influential in continuing the low productivity of AF land. Mbwambo et al. (2013) alluded to the fact that female-headed households (FHHs) account for 30% of all rural smallholder households in Malawi, while in western Kenya, more than half of the families are headed by women.

Mbwambo et al. (2013) affirm that in Zimbabwe, women in communal areas female-headed exceed half of the rural households. Consequently, largely rural men migrate to urban areas searching for off-farm income, leaving the responsibility for food procurement, collection of fuelwood, fodder, and other tree products for the family to women.

Kiptot and Franzel (2011) affirm that AF practice is a farming system in which crops, trees, shrubs, and livestock intentionally established on the same plot of land is commonly a shared production system in Africa.

This type of farming system in which female farmers are responsible for producing the most extraordinary labour, particularly in the smallholder dairy farms of Central Kenya, is the centre of farming (Kiptot and Franzel 2011). Thus, most Southern African countries mainly depend on AF practices to accomplish economic growth. The fast-growing population and the escalation in the food demand that has caused tremendous pressure on the land base aggravate the financial challenges.

Women provide the maximum labour cutting grass, manure application, feeding animals, milking, fetching water, and even selling milk (Kiptot and Franzel 2011). This is crucial since AF practices are cost-effective systems that need limited input and provide a diversity of AF products and services such as fodder, food, and timber in the form of woodlots for domestic use, fruits, and soil fertility improvement.

This system offers immense opportunities to women who, in most cases, cannot afford to adopt high-cost technologies owing to their severe cash credit constraints and sustainable income generation. Women play a vital role in poverty alleviation by providing food security and cash earnings generated from the local markets in Southern African countries. Women's role was widely portrayed in Esther Boserup's now-classic book, "Women's Role in Economic Development" (Boserup 1970).

Boserup (1970) used research data from Africa, Asia, the Caribbean, and Latin America to highlight women's central positions in the economic life of their societies. The Committee for the Elimination of Discrimination against Women has frequently realized the reputation of ensuring equivalent opportunities for women's participation in decision-making in AF practices.

In examining States parties' reports, the Committee noted that full and equal women's involvement in decision-making in public life, the execution of their rights and compliance with the Convention improved (Langford 2015). Therefore, in this context, this study sought to investigate how women participate in decision-making in AF. The literature talks about women's activities, but less about their participation in AF. Therefore, the requirement for this study concentrates on women's involvement in decision-making in AF.

A new publication observing the gender dimensions in AF in Malawi showed that both men and women play a crucial role in tree planting and tree management decision-making, which has important implications for successful AF practices (Doss 2011; Langford 2015). However, there is a significant concern that in the past decade, greater attention had been paid to the gender dimensions of activities related to agriculture and food security, but neglected the participation of women in decision-making in AF.

The need to involve and empower women in research and practical interventions in decision-making in AF was recognized. However, when it comes to AF, there is still minimal information available on the role of women in decision-making in AF and management.

The available data on rural agroforestry feminization reflects the contradiction that, this is not a general trend, but is mainly a sub-Saharan African phenomenon (Doss 2011).

However, there is a strong belief that women make essential contributions to AF and rural enterprises across the developing world. It was indicated that there is much diversity in women's roles and over-generalization of women's participation in decision-making in AF, which undermines policy relevance and planning (Debbarma et al. 2015). Women in tribal communities are more active in the field than non-tribal, but they earn less owing to a lack of market and transport facilities (FAO 2010; FAO 2013).

The return from other livelihood components by the tribal community is highest, where fruits offered more remuneration than other crops (FAO 2010). Women are more involved in AF marketing, production, and preparation, harvesting, as well as education of children, household work, childcare, work distribution, protection, and management of female and male communities (Debbarma et al. 2015). Furthermore, women play a significant role in activities fulfilling the family needs by participating in various AF practices.

Agroforestry emerged as a sustainable land-use management practice addressing land degradation and soil fertility loss and encouraging smallholder farmers and women to embark on AF practices (FAO 2013). Women are more involved in crop production, while men are more interested in tree production for commercial purposes.

There is a strong feeling that AF systems are regarded not as gender-neutral, because of the comparison between men and women (Debbarma et al. 2015). Women are generally disadvantaged regarding access and control over AF-related activities, which contribute to economic opportunities. Despite women having highly specialized knowledge in AF, they are still ignored and neglected, when it comes to their participation in AF decision-making (FAO 2010; FAO 2013).

Women's extensive expertise in AF practices, including tree species diversity, management, and tree utilization for various purposes, is not considered (FAO 2010; FAO 2013). However, under normal circumstances, the comparisons between women's and men's knowledge of trees relate to household food consumption and health (Debbarma et al. 2015; FAO 2010; FAO 2013).

Women's participation in decision-making in AF is more significant, particularly during food crises. In the same vein, women's involvement in decision-making in AF plays a vital role in the value chain where AF activities contribute entirely to women's income generation to sustain their livelihoods, their well-being, and food security to alleviate poverty and hunger (Debbarma et al. 2015).

This is when women harvest and process fruits and sell them to generate income to sustain their livelihoods (FAO 2010). In this premise, the study seeks to investigate the extent of women's participation in decision-making in AF. However, there is a notion that policy-makers and service providers poorly support women's involvement in the AF value chain (FAO 2013).

The lack of empirical evidence for women's participation in decision-making in AF reflects the lack of women's empowerment in AF, which created significant underdevelopment opportunities where important spill-over benefits for their households and communities (Joshi 2014). Regarding the extent to which women participate in decision-making in AF, women and children are the primary victims of poverty.

This was revealed in the study conducted in the Ratopahiro community of Pokhara, Kaski district in Nepal, where it was revealed that poverty is prevalent in the developing world (Kaphle 2011). AF is considered an effective system that helps to reduce poverty through income generation, which can be accomplished through women's involvement in decision-making in AF at all levels.

Approximately, 60-80 per cent of women farmers are considered subsistence farmers, and over 50 per cent of the total female employment is low-income in the developing world. Further, Kaphle (2011) affirm that rural women grow and harvest most of the staple crops and collect fodder and fuelwood required for their subsistence in developing countries. This is common in most rural communities.

Poor, marginalized, and disadvantaged people, particularly women and children, whose livelihood primarily depends on AF, accept one gender's dominance in different spheres and are less appreciated in the extent to which one sphere influences the other (Joshi 2014). Most importantly, men dominate AF activities, but not the firewood collection.

There are challenges from other authors' conceptions of marginalized groups, where they state that these groups can describe their opportunity to plan and employ numerous weapons to challenge those in power and participate in development and decision-making (Kaphle 2011; Joshi 2014). Thus, emphatically raise critical points related to women's non-participation in decision-making in AF practices and processes.

In a case study from Vietnam, Pham, MAI, Moeliono, and Brockhaus (2016), analyzed the factors that influence women's participation in National level REDD+ decision-making processes. Although many women participated in the REDD+ meetings, the study revealed that they were victims of discriminatory cultural and social norms. Thus, this has remained an obstacle to the full participation of women at the national level.

The Vietnamese case study emphasizes the necessity for the REED+ policy to assume complete accountability for women's and men's distinguished rights, roles, and responsibilities. The study revealed that women realised that what they were saying was not listened to or considered seriously relative to what men were saying (Pham et al. 2016).

In this case, women's reflection is diverse, and the processes by which people are given access to participation are assessed and diverted away from situations of power and wealth and that fundamentally occurs through the goal-oriented interface (Pham et al. 2016). Thus, women are disadvantaged in such interactions and lack power, and wealth and they fight for individualities of capability and self-worth.

The potential for women's public action in areas such as reforestation and soil and water conservation is high because they are the principal sufferers of environmental degradation (Kathmandu 2014). This cannot be overlooked since women walk long distances to collect water, fuelwood, and fodder in most rural communities. In addition, women are involved in producing subsistence crops on progressively degraded soils.

Women are both stakeholders and can organize the community for action (Kathmandu 2014). Women are responsible for a significant portion of domestic and farm responsibilities, and there is a gradual shift in women's social status in India and Nepal. Evidence of women's growing empowerment can be seen in their active participation in public land, and AF activities, which were almost non-existent in the past in the Terai region (Kathmandu 2014).

There has been an improvement in the livelihood of more than four thousand household members of the Public Land Forestry (PLF) groups concerning the poverty reduction goals (Kathmandu 2014). These groups are now collectively generating an additional annual average income of 12 million in Nepali Rupees from the sale of AF products. In addition, the generated revenue currently goes directly to women members.

In this particular case, it has been noted that women have invested a significant amount of cash in their children's education, household food items, health expenses, group savings, and credits.

This created enabling environment for women to enhance their livelihood and the well-being of their families. There is minimal documented information about Agroforestry (AF) practices in South Africa (Guiney 2016).

In most cases, AF is practiced in rural areas where rural women employ traditional methods to sustain their livelihood (Guiney 2016). The available AF practices in SA are highly disjointed and very challenging to access. Few current research studies on AF in SA reflect an apparent potential expansion of AF research. AF acceptance obstacles and outselling require interventions that include technical, economic, institutional, governance, policy, and social issues (Guiney 2016).

A study in the Eastern Cape Province, in South Africa, which explored the factors that limit women's participation in decision-making in AF technologies, revealed that women's participation in decision-making was minimal because of a lack of education and AF experiences (Zerihum 2014). The study outcomes were based on household surveys as a data generation method.

Although most studies have attempted to address issues of new AF technology acceptance by women, they have not explored the nature of women's participation in decision-making in AF, how they learn about AF decisions, and educational processes and strategies enhancing their participation in decision-making (Zerihum 2014).

This study attempts to fill the gap in women's participation in decision-making in AF in South Africa, with specific reference to Umvoti.

2. 4. Women's participation in agroforestry in Africa

African countries, particularly South Africa, are experiencing accelerative people compactness that impacts land degradation and deforestation (Palacios et al. 2017; Izac and Sanchez 2001). Agroforestry as a process of integrating trees and agricultural systems has the potential to change agricultural systems and enhance food security while accomplishing agricultural productiveness.

Women have been at the forefront of agricultural programmes, which have contributed to approximately 80% of the economy worldwide (BBS 2010). Agriculture has been realized as the economic backbone of developing countries, where most rural women depend on it for subsistence.

Approximately 20.01 % of developing countries' GDP originates from the AF sector to which women contribute a substantial amount of the population, and their majority reside in rural areas (BBS 2010). However, women contribute to agricultural production but it has hardly been recognized owing to the existing traditional society which is dominated by the male in development programmes. Women's participation in decision-making in AF is constrained and it requires enhancements.

However, the literature indicates that household behaviour and women's improvement usually anticipate household behaviour and its outcomes. Although there are various examples of decision-making at the household level, studies from developing countries such as Malawi, Zimbabwe, Kenya and Tanzania, show that male household heads act as if they were individuals (Doss 2013).

Further studies assessed these various models, and it was assumed that these models are related to households in developing countries (Doss 2013). However, levels of participation in decision-making in the household particularly among women, reach from none participation to sole decision-making.

Nosheen, Ali, Ahmad and Nawaz (2008) in a study in Malawi, investigating men's and women's participation in various levels of AF practices revealed that men were making decisions on their own excluding their wives. Thus, the study concluded that women were alone responsible for food crop production and in minor instances, responsible for the establishment and management of trees, and small livestock management. However, their participation was limited to AF practices and excluded from decision-making.

2.5. Conclusion

This chapter presented the conceptual framework based on the literature reviewed from different resources, reflecting concepts of women's participation in decision-making in AF practices, how women learn about AF decisions and educational processes, and strategies currently in place to enhance their participation in AF decision-making.

The conceptual frameworks reflected that '**Participation**' has been used to examine the nature of women's participation in decision-making in AF, but failed to provide how women learn about AF decisions, and educational processes, strategies, and studies that could be used to enhance their participation in decision-making in AF.

Thus, learning was drawn in as a concept to address how women learn about AF decisions and educational processes and strategies used to enhance women's participation in decision-making in the AF space.

This chapter again presented the nature of women's participation in AF decision-making. The literature reviewed in this chapter included studies conducted by different researchers in different regions to examine the extent to which women participate in decision-making in AF, the benefits of AF to women, their involvement and access to resources, and the influences that impact their marginalization from AF practices.

In addition, this chapter discussed the different studies that considered women's extremely recognized specialized trees and food crop production, knowledge about other tree species and management for various uses. It concluded that, despite women's knowledge and experience in AF practices, they are still frequently deprived of the opportunities to participate in decision-making owing to their interconnected socio-economic, cultural, and institutional reasons.

Furthermore, women's knowledge tends to be connected to domestic food consumption and health, which is significant throughout food crises. Considering gender aspects in AF should be of priority need to ensure that women are not marginalized in AF and interventions also should be prioritized.

CHAPTER 3

CONCEPTUALIZING THE NATURE OF WOMEN'S PARTICIPATION IN DECISION-MAKING IN AGROFORESTRY

3.1. Introduction

The previous chapter presented a literature review on women's participation in decision-making in agroforestry (AF). This chapter described the theoretical foundation of the participation process in decision-making. This chapter describes the theory used to guide this study in understanding the nature of women's involvement in decision-making in agroforestry (AF) in Umvoti municipality.

Participation as a process occurs in various forms, as it is perceived as a definite collective quantity of principles collected to guide the research project. Participation is frequently placed within the democratic framework of institutions that are understood in various ways (Richard 2013; Kapinga and Mantora 2013).

Thus, the chapter looks at participatory democracy theory as a lens to explain how women participate and learn about AF decisions and acquire new knowledge.

3. 2. The Context of Participation

The participation process originated in the early 1960s as the Western ideology to influence community involvement in development, radicalism, and contribution to social work (Midgley 2000; Bundy 2014).

However, participatory process appeared as trial and error using the evident resolute success of worldwide attribute, and top-down strategies to topically sensible method.

Thus, the marginalized groups normally employed participatory development projects, which drew on Freire's legacy of critical reflection and earlier participatory research methods to develop a set of practices, tools, and methodologies, which facilitate critical reflection, analysis, and action (McKee 1992; Bundy 2014). Participatory theories introduced concepts that explain the different ways in which people (women) participate in decision-making in AF.

However, those concepts enabled the understanding of the available instruments, which are needed for practical guidelines for intervention and change (McKee 1992; Bundy 2014). Although there are various opinions about the origins of the participatory theory, there is consensus that participatory theories originated from political sciences and development theory (Hilmer 2010). Participation was recognized to an undisputable level as participatory theory, and its practice was considered a possible option for liberal political theory as an explanation by American policy-making (Hilmer 2010).

Participation is a process whereby the community, individuals, groups, or organizations actively participate in the decision-making processes that affect their lives (Reed 2008; Brooks, Wayken, and Mulder 2013). Typically, policymakers, decision-makers, and government agencies practice participation in various ways.

Participation is described as a 'process which permits individuals, groups or community and stakeholders to exercise their powers over their development programmes, and under the conditions, to sustain their livelihoods (Wilkinson and Dundon 2010). It is broadly encouraged because of its various concepts of connotations and meanings.

Gray et al. (2012) contest that there is no clear standard definition of participation; hence, this indistinctness and conceptuality of participation and empowerment result in confusion over anticipations and the participatory development process.

The literature on participation reflects that participation is based on the extent of participation (direct versus indirect) and the objectives of employing and implementing a participatory approach (Wilkinson and Dundon 2010). Participatory the concept of participation is frequently employed broadly to describe a broad scope of various activities and processes.

Other theorists conceptualized participation as a hierarchical level of practices with fundamental interaction and dissemination of information, power-sharing, and concerted decision-making (Wilkinson and Dundon 2010). A distinction in the participation process has been made between the actual participation (collaboration), involvement of community/individual, and (decision-maker) participation dominated in decision-making.

Based on various scopes of activities and processes, several arguments questioning the participatory approach as a conceptual model are required (Wilkinson and Dundon 2010).

Responses to these arguments are crucial in explaining why this model is a requirement.

The reason for developing the conceptual participation model was to enhance the researcher's understanding of describing an intervention as a participatory approach (Nielsen and Randall 2015). It is essential to evaluate participation across various magnitudes to generate a more straightforward representation of some qualitative differences in forms of participation and quantitative differences in the extent of participation across various development programmes (Nielsen and Randall 2015).

Participation is perceived as the supreme participation mode for a community in their self-governance, particularly in social sectors on top of those traditionally understood as policy-making, such as the household and workplace (Hilmer 2010). Participation is a term that involves various people, including impoverished rural women, participating in decision-making processes.

This study used a participatory framework to analyze the transformation in the levels of participation by various stakeholders in research on adaptive collaborative decision-making, which aims at ensuring the sustainability of development projects and the successfulness of community livelihoods (Meadowcroft 2016).

3. 2. 1. Participatory Theory

Participatory theory refers to a term that denotes the practice of involving people in decision-making processes (Mody 1991). Thus, in this study participation means involvement of women or individuals in agroforestry decision-making processes to enable them to make an informed decisions.

This theory recognizes women's involvement in decision-making at all levels (Tuftte and Mefalopulos 2009). Development programmes have tried to adopt concepts from other countries as the primary source of information. Development programmes in Southern African countries have shown elements of participation in several projects. However, only a few of these projects involved women (Tuftte and Mefalopulos 2009).

People must participate actively and positively in the decision-making processes in the initial stages of the project planning, and it should not be imposed on the people, as it might make them feel oppressed (Sundaram 2002). The importance of participation levels should be recognized when embarking on the participation processes. These levels are the informative level, consultative level, associative level, administrative level, and influential level.

3. 2. 2. Participatory Democracy Theory

The term “**participatory democracy theory**” refers to a particular theory of democracy that responded to Arnold S. Kaufman’s inclination toward "participatory politics." However, other scholars such as John Dewey, C. Wright Mills, and Paul Goodman (Gray et al. 2012) influenced this theory.

Further, participatory politics were considered to have contributed to the human quality improvement of thought, impression, and human activity (Hilmer 2010;Wojciechowska 2022).

Comments about "participatory democracy" became increasingly repeated in American policy-making life and governmental subject in the late 1960s and 1970s (Hilmer 2010;Wojciechowska 2022). Thus, participatory democracy theory gained its popularity in the early 1970s, when it was adequately theorized to provide recognition as a different democracy theory (Hilmer 2010;Wojciechowska 2022).

The well-informed description of participatory democracy was from a governmental Carole Pateman's Participation and Democratic Theory (Hilmer 2010;Wojciechowska 2022). However, drawing on the policy-making opinions of J. J. Rousseau, J. S. Mill, and G.D.H. Cole. Hilmer (2010), contests participatory theory with high authorities and liberal theories, concluding that state-supported participation enables communities to self-development and generate positive scientific discipline values, including feelings of policy-making effectiveness (Hilmer 2010).

The participatory democratic theory reflected participatory theory's weaknesses at the beginning of the 21st century, but existing studies predicted the successful revitalization of participatory theory in the future decades (Hilmer 2010). It is perceived that the impression of a participatory society necessitated the use of the term 'political' to be prolonged to various spheres of government.

The description from the study on the self-management system in Yugoslavia revealed that the familiarities in the social, political, and economic participatory democracy benefits had been relatively democratized (Hilmer 2010). A “genealogy” of participatory democratic theory provided the goal, which offered the researcher a description of participatory democratic theory by drawing its conceptual history.

3. 3. Levels of Participatory Democracy

Participatory democracy as the fundamental element in decision-making is emphasized in various development programmes (Hasle and Sorensen 2013). This is where policymakers, decision-makers, and stakeholders consult individuals, groups, community or organizations, or their representatives and permit them to participate in the discussions on all the development programmes related to their livelihoods (Busck et al. 2010).

This speculates that the consultation of community, individuals, or groups, the right of the individuals or their representatives to make proposals, and balanced participation following policies and practices. This is ambitious concerning involving the community/ individual in all matters concerning their livelihood development programmes (Gupta et al. 2015).

Although numerous participation processes are employed for participation purposes, this study has identified four levels employed for participatory democracy theory (Gupta et al. 2015).

These participatory democracy levels explain why they apply to this study or provide the required outcomes for women's participation in decision-making in AF.

Participatory democracy theory recognizes people's involvement in decision-making (Garmendia and Stagl 2010). Based on the literature, it is possible to explain how various forms of participation work in terms of informative (*context*), consultative (*design*), associative (*mediation*), and influential/ administrative (*democracy*) contexts. However, it has been realized that development programmes have tried to adopt participatory concepts from other countries as the primary source of information dissemination and sharing.

Notwithstanding, development programmes in the Southern African countries have shown participation in several projects. However, only a few of these projects involved women (Tufte and Mefalopulos 2009; Garmendia and Stagl 2010). People must participate actively and positively in the decision-making processes in the initial stages of the project planning, and it should not be imposed on the people as it might make them feel oppressed (Garmendia and Stagl 2010).

This study has identified informative, consultative, associative, and influential/ administrative as the basic levels for participation. The participatory democracy levels are crucial for people's participation in development programmes. Thus, it should be recognized when embarking on the participation processes (Ingram 2013).

Studies that were conducted in countries such as India and Tanzania, focusing on various contexts required for well-defined participation, reflected that socio-economic, cultural, and institutional participation played a vital role locally. Thus, through individual, community, and stakeholders' active participation, consensus would be reached to determine the outcomes of the participation processes (Stringer et al. 2007; Blicharska et al. 2011).

The bottom-up approach with critical powerfulness spatiality tends to inhibit the involvement of poor role players as opposed to formalized, top-down approach (Zeitoun, Mirumachi, Warner 2011; Delli et al. 2004). Powerful mechanisms were detected to be more effectively contained, exceptionally when institutions that have been involved in decision-making processes (Larson and Lach 2008) formally organize these approaches.

These detected powerful mechanisms might affect the nature of the decision made and its adoption (Zeitoun et al. 2011). The dissatisfied individuals, particularly those who might not be happy about the decision made, might have the feeling that they have been disadvantaged by the approach and may prefer to put the implementation of the decision on hold by embarking on legal action (de Vente, Reed, Stringer, Valente, and Newig 2016).

The literature reflects that participation is not a technical process that can be solely reduplicated. Hence, there is an increasing consciousness of the interaction among the policy-making social group, governmental institutions, and political units (Fox 2015; Stringer, Fleskens, Reed, de Vente, Zengin 2014).

The function and responsibilities that traditional standards, worldwide factors, and the predominant policy-making body play on administrative participation should be prioritized. Studies in India, Tanzania, and Pakistan on participatory projects that targeted the participant's well-being material, revealed inadequate evidence that political unit context consistently influenced project results in participatory processes (Brooks et al. 2012).

It was realized that there was a participant's transformation from a participatory approach project to a broad-based "capability" process to empowerment (de Vente et al. 2016). There were highly successful development programmes driven by women in the community, such as the Indian self-employed women's association in India. In Pakistan, the study revealed that the women's association embarked on improving the Orangi slum.

Furthermore, in Tanzania, women had a nutrition project in Iringa District, where they offered lessons for major donor funders reflecting the necessity for women's participation in development programmes to be considered for the socio-political discourse (Menocal 2015).

3. 3.1. Informative (context) level

Informative participation occurs at the initial stages of participation and it allows information sharing between the people and decision-makers regarding people's economic problems, and the decision-makers recommend the options to resolve people's problems (Ghai and Vivian 2014).

Informative participation is characterized by bottom-up or top-down approaches led by government officials and state-supported stakeholders, interest groups with constricted formal decision-making authority or little authority, and various positions to contribute to decision-making (Fraser et al. 2006; Reed 2008).

It has been recognized that it is necessary to have comparative effective informative participation in determining participation results (de Vente et al. 2016). The study's outcomes in India, Pakistan, and Tanzania conservation projects, revealed that community involvement in the informative stage of the project was crucial in providing positive knowledge, behaviour, environment, and economic result (Brooks et al. 2013).

Significant consideration was a priority where some societal characteristics, such as land tenure and cultural beliefs, were crucial for some projects to succeed. Moreover, having an informative participation process in determining the project's results is that policymakers, society, and stakeholders offer broad information to provide informed decisions (Newig et al. 2016).

Poorly planned and expedited participation processes can result in a prejudiced decision-making process. However, an expedited decision-making process can be noticed if the information provided reflects the under-representation or domination of sure participants (Ansell and Gash 2008).

A properly planned participation process yields extremely high positive outcomes, assisting the policymakers and stakeholders in attending to the prevailing environmental situation (Reed et al. 2009).

The participation process must effectively represent fundamental role players who are affected by decisions made during the informative participation process.

The decision made during the informative participation process would reflect the opinions of the implementers (Reed and Curzon 2015). The effective representative should be strategic instead of the entire stakeholder's representation, characterized by different levels of involvement, influence, and value.

The increased number of stakeholders who participate in the decision-making processes contributes to the complexity among the participants because of the different understanding of the system, leading to a comprehensive agreement and abstract prints, which make it difficult for decision-makers to select between options (Büscher and de Beer 2011; Gray et al. 2012).

3. 3. 2. Consultative level

Consultative participation is differentiated between the various motivations and results that drive the participation process (de Vente et al. 2016). The consultative level is the second level of participation, where the decision-makers interrogate people's issues and how people see their situation (de Vente et al. 2016). During this process, people are consulted, though they might not have any control over their views if they are considered or not.

This level of participation is where members share their views on matters affecting their welfare with the management. It involves a higher degree of sharing their views, but the management has the employees' suggestions.

The difference in motives comes in various ways, such as practicality, where improved decisions are to be implemented, and prescriptive, which demonstrates the stakeholders and the community's democratic right and expects them to participate in leading the decisions that have an impact on their livelihood (Reed 2008). Participation motives may enhance stakeholders' and the community's confidence in the decision-making processes (Rowe and Frewer 2004; Rowe et al. 2005).

Various motives are connected to the anticipated different results from the participation process. De Vente et al. (2016), affirm that practical motives are connected to the anticipated outcomes of the decision in which stakeholders and the community are involved, such as the food crop production and woodlot project. In comparison, prescriptive reasons seek to develop confidence and education focuses on benefits for participating individuals or groups (de Vente et al. 2016).

3. 3. 3. Associative level

Associative participation is the third level where people consultation is done with decision-makers regarding people's economic matters, and the decision-makers are bound to accept and implement people's opinions (Hysing 2013). Rowe and Frewer (2004; Rowe et al. 2005), attest that the third and final styles of participation are in line with the information and knowledge transaction continuum.

However, from various approaches and perspectives, associative participation supports a single mode of information and knowledge dissemination to the community and seeks responses from decision-makers knowledge transaction combined with the preparation of goals and results as two-way processes (Rowe and Frewer 2004; Rowe et al. 2005).

3. 3. 4. Administrative level

Administrative participation is the fourth level where people participate in decision-making, which decision-makers have already concluded (Gray et al. 2012). People have no choice but to choose the best option or decision from the pull of decisions provided by decision-makers for implementation purposes.

The administrative level is the last highest level of people's participation in decision-making (Gray et al. 2012). Therefore, these concepts about the participation processes enabled this study to understand women's participation in various levels of decision-making.

3. 3. 5. Influential/decision participation

Influential/decision participation is the advanced level of participation where the community is allowed to participate in decision-making activities (Benit-Gbaffu 2015). However, the decision-making power is absolute at this level, and the delegation of authority is maximum.

It is essential to consider that participation in administration is generally consultation on issues related to the development and society's well-being. The supreme responsibility is vested in the management (Benit-Gbaffu 2015).

The entire sustainable development is subject to collective decision-making and is excluded from the preview of the community participation plan, and the individual opinions are eliminated from the plan of action (Benit-Gbaffu 2015).

3. 4. Gender and participation

Gender participation in development programmes is generally obstructed by cultural and legal constraints, limiting women's participation (World Bank 2020). However, these limitations are mainly due to women's lack of time and mobility caused by their workload and multiple roles.

Munman, Hoque, and Kabir (2015) attest that if participatory development benefits from women's contributions and delivers on women's requirements, the scope of strategic and applicable measures to subdue this obstruction should be considered, hence, women perform a fundamental role in the AF support system (World Bank 2020).

Women are considered the custodians of AF practices in this context as they have demonstrated vast farming knowledge (Munman et al. 2015). This confirms that women's AF initiatives are escalating at an alarming rate in most developing countries. Hence, the primary objective of this study was to determine the extent of women's participation in decision-making in AF activities in Umvoti Municipality.

It has been realized that these women's AF initiatives enhance the well-being of local households to sustain their household livelihood (Gaventa and Barret 2012).

Most women farmers require a transformation in production strategies from household-based garden projects to cooperative, commercially managed, and communally owned projects.

Through participation, women can enhance the sustainability of their livelihood quality, irrespective of position, a location where women are formed into groups, spread out their production, and improve the marketing of commodities to close urban cities as their strategic role in contributing to their family income generation (Swanson and Rajalahti 2010).

Participatory models suggest a human-centred approach that positively affects the lives of all people, who should participate in the decision-making processes at the community level (Freire 2020). The conceptualization of other opportunities, freedom, abilities, and willingness to be involved in decision-making should be considered (Sundaram 2002). These concepts assist in addressing this study's key question.

Participation offers individuals equal rights and opportunities to participate and contribute effectively to the decision-making processes (World Bank 2012). Therefore, the inclusion of the community, particularly women, in the participation processes is tagged with various factors about environmental development, social standards, assets, asset orientation, and individual and governmental agency.

Intensifying women's participation in decision-making in AF requires widespread endeavour concerning individuals, households, communities, and the entire nation (Zaman 2002).

The study attempted to explore possible causes that influence women's non-participation in decision-making in AF.

Women are mostly exposed to operating under adverse conditions that withstand social and religious obstruction and discrimination, but their efforts are neglected and ignored (Zaman 2002). Yet, they have contributed significantly through their home base garden projects and household chores.

Women contribute extensively to the AF economic systems in all developing countries, as their roles differ substantially within countries, and they are changing rapidly in various environments of the world, where economic and social power is transforming the AF sector (SOFA 2011).

Studies conducted in most developing countries, including Bangladesh, revealed that women participate in AF activities aboard other domestic chores (Sarma 2009; Bhattacharyya, Vauquiline, Singh 2010). Thus, women's participation in decision-making hinders their performance owing to a lack of access to AF inputs, employment, and water.

FAO (2010), affirms that in developed countries, women contribute 30.7% of the agricultural labour force, while in developing countries they contribute 43.6%. Thus, female farmers are reasoned to be as cost-efficient as men are. Bhattacharyya and Vauquiline (2013), attest that women in various societies are the principal farmers and marketers of AF produce (food crop production), and their participation is vital.

Numerous factors, which influence women's capacity not to participate in the decision-making process, were widely identified and recognized as an institutional imperative and these institutions tended to ignore their participation in decision-making. These institutions jeopardized the effectiveness of the participation process, alienated and increased the burden on disadvantaged groups, particularly the women and the poor (Bhattacharyya and Vauqueline 2013). It has been realized that participatory institutions exclude women even though they are a significant sector.

Studies, which were conducted on women's participation in decision-making in AF in Bangladesh, revealed that women play an essential role in the small-scale farmer's system (Bhattacharyya and Vauqueline 2013). It has been realized that women are ordinarily responsible for food crop production, mainly where the AF system includes food and cash crops.

The potential endowments and attributes associated with women's participation in decision-making in AF are determined by the rules, standards, and perceptions of participation (Bhattacharyya and Vauqueline 2013; Bhattacharyya et al. 2010). These rules, standards, and perceptions of participation disadvantaged women separately and interactively.

Gender necessity is reasoned to be a priority based on valid reasons, where men and women have various perceptions, requirements, and opportunities to participate in AF decision-making processes (FAO 2010). Gender equality is lacking; hence, women and men perform from unequal platforms, particularly access and control over resources, such as land and water.

It has been realized that the AF sector is underperforming in various developing countries for various reasons; among them is the lack of women's access to the resources and opportunities they require to contribute to their productive time (FAO 2011; FAO 2010).

Women are highly recognized as farmers and they provide labour as workers and entrepreneurs, but they encounter terrible constraints as compared to their men counterparts, in accessing productive resources, markets, and services (FAO 2011; FAO 2010). This “gender gap” denied them an opportunity for productivity and limited their participation in decision-making to contribute to the AF sector.

Through gender gap constraints, women are prohibited from achieving various economic and social development goals (FAO 2011; FAO 2010). Thus, it is assumed that the termination of the gender gap in AF will bring forth essential gains for the community by accelerating AF productivity, reducing poverty and hunger, and advancing economic growth (FAO 2011).

Men’s AF activities are recognized, whereas those of women are neglected and ignored (Bhattacharyya et al. 2011). Bhattacharyya et al. (2011), affirm that the women in Madhupur experienced cliques that were to a great extent believed in cultural values, normative patterns, and customs, most of which were without religious and ethical endorsement.

Women’s participation in development was recognized by acknowledging the world's poor development experience.

This was due to miserable development and that community requires participation in development decision-making, implementation, and benefits (Gray et al. 2012).

Bhattacharyya et al. (2011) attest that women were never acknowledged for their labour; hence, this study was conducted to explore their extent of participation in decision-making in AF activities. Suppose both men and women are to participate in the same project, gender issues should be a priority at the initial stages of a project design by determining gender constraints and steps to ensure that the perspective and women's interests are integrated with the project design (Bhattacharyya et al. 2011).

Participatory theories introduced concepts that explain the different ways in which people participate (Brooks et al. 2013). Those concepts enabled the researcher to understand what instruments were available to provide sufficient practical guidelines for intervention and change. This enabled this study to answer the significant question, which seeks to explore the nature of women's participation in decision-making and make recommendations for further interventions.

3. 5. Merits and Demerits of participatory democracy theory

Participatory theory assisted this study in exploring what issues, structures, attitudes, and procedures constrain or assist women in participating in decision-making and in fighting against inequality. The study seeks to explore the extent of women's participation in decision-making. Therefore, to answer this question, the participatory theory will assist this study in understanding what participation systems or mechanisms are in place.

3. 5.1. Merits of participatory democracy

Participatory democracy provides improved ways of resolving problems experienced with other approaches and assists in eliciting poor people's views to configure strategic plans and contribute to development strategies (World Bank 2012). In the context of this study, women's participation in decision-making in AF activities will enhance women's income and valuable information sharing.

Participatory democracy provides a wide range of support and commitment to all individuals and protects their autonomy (World Bank 2016). Participatory democracy allows all societies to participate in decision-making through their representatives, lobbying, and voting; hence, their representatives are conscious of their jobs based on their constituent's requirements.

3. 5. 2. Demerits of participatory democracy

Participatory democracy received constant criticisms from various sources, including the Critical Legal Studies movement in the United States, because of its top-down approach to decision-making processes (Armitage, de Loë, Morris, Edwards, Gerlak, Hall 2015). This criticism included Marxist inspiration and feminist discourses that have considered concealed attention influences and the powerfulness of law.

The participatory democratic theory criticisms were assessed, and conclusions were drawn about why its popularity declined and faded (Armitage et al. 2015). However, there are strong suggestions related to the decline of participatory democracy theory, and some call for debate in respect of the degree to which deliberative democracy was participatory.

This is an important debate to be considered because most of what is processed for “participatory democracy” is currently considered the rubric of “deliberative” (Armitage et al. 2015). The continuous critique of an autocratic and paternalistic approach attributed to a reconceptualization of righteousness that emanated from the discourse of equals, which is a bottom-up approach to justice, where well-decided evidence, natural process, and cooperation are the authentication of a qualitatively well-defined form of discussion amongst the organization.

Studies in developing countries such as Nigeria, Tanzania, and Zimbabwe in AF reveal that cooperative approaches of knowledge and evidence prevail in longer-lasting individualized effects on stakeholder relationships, social learning, and implementation of AF legislation (Armitage et al. 2015).

The top-down approach could not provide the expectations of a coherent society (Dobson 2010). This contributed to the policymakers and decision-makers experiencing severe opposition from communities that felt disadvantaged. This was reflected in the fancy and well-developed strategies, but unsuccessful implementation because policymakers and decision-makers lacked adequate information and support from the stakeholders and recognition of the adverse effects of technology (Easterling, Neblo, Lazer 2011).

In cases where conflicts occur, particularly during decision-making processes with polycentric conflict affecting various participants and diverse issues (usually during the stakeholder participation processes), alternative conflict resolution can precede the mediation route instead of arbitration (Armitage et al. 2015).

This might be because mediation is considered a hierarchical approach to conflict resolution (Armitage et al. 2015). Enabling the solution to conflict resolution emanated from the discussion and fundamental interaction of the participants, in the absence of an external authority, which may be a judge to regulate the subject (Vella et al. 2015).

It is crucial to define mediation broadly, as this refers to a method employed for intervening in conflicts that enables the participants to reach an understanding through the facilitation of a neutral mediator. However, this can assist in minimizing the impact of imposing the decision on the external participants (Vella et al. 2015).

Vella et al. (2015), affirm that mediation and participation processes are typically directed at stakeholders to resolve conflicts instead of imposed solutions from external mediators such as the judge. The purpose of mediation is to balance the solution instead of portraying lost type outcomes from lawful processes (Bell et al. 2011).

Participatory democratic theory disappeared because of its idealistic nature, which relied on theoretical tools employed by participatory theorists lacked of empirical evidence that participatory democracy makes good on its promise to provide citizens with political education (Bell et al. 2011;Wojciechowska 2022).

However, there are assumptions that in the case of the informative effects of participation, the effects proposition by the theory took perceptive forms that empirical studies could not capture owing to its limited quantity of people.

The lack of funding for research demonstrates the viability of existing community-based resource management and experimental projects that would be necessary for community and stakeholders' participation (Bell et al. 2011). Further, participatory democracy faced criticism because the impact of views on projects was often remote because of its subjective nature, whose voices were being heard, and the reflection of existing power relations in a community.

3. 6. Conclusion

The previous chapter presented the background to this study on women's participation in agroforestry (AF) decision-making in Umvoti Municipality. This chapter described the theory used to guide the study in understanding the extent to which women participate in decision-making in AF.

This chapter focused on participation, concentrating mainly on participatory democracy theory and its impact on people's participation, considering gender perspective in the decision-making processes in development programmes. However, improving people's participation in decision-making in development programmes is often understood as an essential characteristic of governance for sustainable development.

The chapter considered the participation process in decision-making as the crucial requirement for the accomplishment of sustainable development.

Further, the chapter emphasized the importance of a well-designed consultation and participation process as essential regarding policies to advance sustainable development, hence, the numerousness and complexness of the sustainable development millennium goals (SDGs).

The chapter reflected that participation occurs in various forms, as it is perceived as a definite collective quantity of principles collected to guide the research project. Participation is frequently placed within the democratic framework institutions understood in various ways.

Furthermore, the chapter presented processes of participatory democracy levels, briefly explaining their critical roles in participation levels.

The study explored how women participate in decision-making, intending to make recommendations for training to improve women's participation. Further, the study explored the role of women's participation in decision-making in AF to sustain their family livelihoods.

The chapter looked at participatory democracy theory as a lens to explain how women participate and learn about AF decisions and acquire new knowledge about AF, and would specifically look at how gender as a social construct influences women's productivity and access to decision-making structures.

The study further employed participatory democracy theory to understand and explain why AF is practiced, and how, and why people behave in the manner, they behave.

This theoretical framework guided the researcher to understand and explain data findings.

The chapter discussed participatory democracy levels as modes of participation to enable the researcher to understand how women participate in decision-making in AF. However, these various modes of participatory levels are considered to determine how women participate in decision-making.

CHAPTER 4

Research Methodology Design and Approach

4.1. Introduction

This chapter presents the research process, which was employed to investigate the research questions as described. It also presents the research design and approach, population, and sampling procedures for the documentation of the participating women. Pre-testing (pilot study), primary study data generation, trustworthiness, and ethical consideration are also discussed in this chapter.

4.2. Research Paradigm

A critical paradigm was used to guide this study. A paradigm is a worldview or belief within which research occurs (Creswell 2012). The critical paradigm would potentially positively encourage women to measure how they participate in decision-making at all levels (Creswell 2012). In this context, the study used the critical paradigm to understand women's views, thoughts, and opinions regarding their participation in decision-making in AF in Umvoti.

The paradigm's choice showed the researcher's underlying worldview regarding how truth and knowledge are understood (Creswell 2012). In this study, the nature of the questions about women's participation in decision-making enabled women to become aware of the necessity to participate in decision-making at all levels. Through data generation, women had space and a platform to reflect and realize the injustices.

Bohman (2005), affirms the notion that the critical (theory) paradigm enables researchers to explore and address the *status quo* for advancing a balanced and democratic society.

This paradigm is relevant to this study since the researcher intended to understand women's views, opinions, beliefs, and perceptions regarding their participation in decision-making in AF, and how they learn about decisions in AF.

4.3. Research Design and Approach

This study adopted DeWalt and DeWalt's (2002) definition of the research approach, where they argue that research design is a plan that consists of steps based on extensive expectations about the right approaches for data generation, analysis, and interpretation. Although Bless and Higson-Smith (2008) and Creswell (2007) contest that, those three main approaches characterize research: qualitative, quantitative, and mixed methods, this study employed only a qualitative approach. The study adopted a qualitative approach as the research design (Bogdan and Biklen 2007).

Qualitative research is designed to address the high level of ambiguity (Yin 2013). For example, the extent to which women are involved in decision-making in AF is unknown. Therefore, a qualitative approach was chosen to ensure that the research problem, purpose, research questions, and theoretical frameworks are aligned to explore the extent of women's involvement in AF.

A qualitative approach is an approach that seeks to understand individuals' experiences in their natural settings (Straus and Corbin 1990) from their perspectives. A qualitative approach was employed to gain an in-depth understanding of women's feelings, motivations, beliefs, views, opinions, and values about their AF decisions from various settings.

Further, a qualitative approach was employed to observe women's performances in the fields where they practice (Creswell 2012). The qualitative approach is a means of finding patterns in the data generated. Thus, this approach enabled the researcher to look for patterns in the women's responses to the researcher's questions (DeFranzo 2011; Lincoln and Guba 2007). The pattern of reactions revealed the extent to which women shared the same feelings and experiences.

4.4. Population and Sampling

4.4.1. Population

The target population was all women farmers practicing AF in Umvoti. The population "is a totality of members or groups that form part of the problem," (Polit and Hungler 1999). Women of Umvoti, with similar characteristics, e.g., practicing agriculture and forestry, formed the population for this study.

These six wards are those that are involved in AF practices. Therefore, the total population for this is 60 per cent of Umvoti women, of which only ten per ward are practicing AF. On this basis, the population was approximately 66 women in AF.

4.4.2. Sampling method

Sampling is the procedure of selecting units like people, organizations, or wards from a population of interest (Trochim 2006). Sampling was conducted using purposive design and random sampling. Using purposive and random sampling enabled the researcher to choose knowledgeable and willing participants, as Cohen, Manion, and Morrison (2011) cautioned.

Patton (2000), affirms that purposive sampling for observations and focus group discussions enables the researcher to choose knowledgeable and willing participants. Enhlalakahle and Nseleni were purposively selected for observation and focus group discussions. The selection criteria for these two wards were particularly effective in AF practices compared to the other wards.

The intended number was ten women per ward, which equated to 20 women from the two wards. Random sampling was used to select 16 women from the four remaining wards for the interview: Shane, Mbulwane, Matimatolo, and Ntembisweni. Umvoti Municipality provided a list of all women's names to select randomly by giving each name a number, putting their numbers in a hat and then drawing the first four numbers per ward from the hat.

The total number of participants altogether was 36 women, for whom purposive and random sampling were used to enable the researcher to get in-depth knowledge about the study to answer the research questions. Lewis and Sheppard (2006), attest that the selected people should have relevant knowledge and experience to investigate the subject. All women chosen for this study proved to have vast knowledge and experience in decision-making in AF.

4.5. Data Generation

The study followed Given's (2008) argument that data generation is a collection of methods used to create data from a sampled data source in a qualitative study. For this study, the researcher used different instruments to generate primary data. Various data generation methods in qualitative research are employed for this process.

This study used observation, focus group discussions, and individual interviews for data generation.

The use of multiple data generation methods enabled the researcher to triangulate accurate data (Bryman and Bell 2015). However, using different data generation tools empowered the researcher to understand the participants' feelings, concerns, and perceptions. It is critical that data-generating tools that are to be used for data generation for the main final study be tested before the primary data generation process (Creswell 2012).

A pilot study is crucial before developing the main research plan to enable the researcher to make informed decisions about finalizing the primary research (Creswell 2012). During the pilot study, ambiguous questions, which might confuse participants were identified and added and some of the missing questions that might affect the final main study were corrected. Finally, the researcher merged and refined some of the research questions that may require a similar response from the participants.

4.5.1. Pre-testing

Pre-testing (pilot study) tests the research instruments before implementing the complete main study (Ismail, Kinchin, and Edward 2018). The pilot study (PS) contributed to the decision as to how best the final research could be conducted. A PS is a minimum study that is conducted before the last main study to test the accuracy of research instruments (Ismail et al. 2018).

The researcher used this technique to identify weaknesses and challenges of the research process and questions that might upset participants or obstruct them from providing appropriate information during the final study.

The researcher recognized any unanticipated characteristics that could lead to the failure of the study to achieve its objectives. The significance of the participants' preparedness to participate in the study was realised (Simon 2011).

Piloting was crucial for generating accurate data that influenced the final primary survey. It was critical to pilot with participants who were not participating in the main study to limit replication (Arain, Campbell, Cooper, and Lancaster 2010). The pilot study was conducted in the I Lembe municipality. It was excluded from the actual main study area to ensure that the investigation and data generation methods were suitable and able to accomplish the study objectives.

Before the PS, the researcher consulted the I Lembe municipality to conduct this pilot study, which was granted. This included the researcher's request for an introduction to the women's group and the wards in which the study was piloted.

During the PS process, the researcher noted all research questions that needed to be refined, merged, or deleted because of their similarities, not making any sense to the participants, or causing confusion that could not address the research questions. This practice enabled the researcher to estimate the period and the resources necessary to finish the main final study.

As an outsider from the government institution, coming to conduct a PS, the researcher was subjected to numerous curious questions and inquiries from the participants.

They asked the researcher questions as he was commencing to introduce himself and state the purpose of his visit. Some questions they asked included, "What kind of support will the government offer to sustain their community livelihoods?" and "Is the government going to provide them with any agricultural inputs, equipment, and financial support?"

The researcher needed to respond positively to their questions as these were used as icebreakers to set the scene to enhance the data-generating process. The pilot study lasted for three weeks owing to the transcript translations. The number of participants for this PS was based on Guest, Bunce, and Johnson's (2006) guidelines, which indicated that at 8% of the total number, the pilot study should constitute the number of participants.

It enabled the researcher to determine how many participants had to be interviewed for this PS. Following the observation schedule, this PS was conducted, using individual interviews and focus group discussions, which were scheduled with 12 women participants from the ILembe ward. The focus group discussion lasted for an hour and each interview lasted approximately 90 minutes.

One focus group was conducted one day, with eight women participants and four individual interviews were held on the following few days in the field where they practiced AF. It accommodated participants' busy schedules on their normal field working days. Interviews and focus group discussions were audio and video-recorded after the participants had agreed that they were comfortable with audio and video recordings.

Both interviews and focus groups were conducted after each participant had signed an informed consent form. The informed consent form reflected confidentiality and the right to withdraw. Participants were requested to reflect on the complete discussion on the pilot study questions, and on how the researcher had conducted the study, and they had to provide their feelings, opinions, views, and perceptions on the questions asked. There was a time lag between the different interviews to acquire feedback from the participants. Subsequently, the feedback given was used to inform amendments for the final set of interviews.

4.6. The Study Interview Process

The data collection was designed to observe women in the field of practice, in their natural settings, and pose questions and take notes in the process of practicing. The aim was to conduct individual interviews with women participants in the field where they practice AF to be convenient for them, considering their time and place of practice. This exercise saved much travelling time and accessibility to some inaccessible study areas.

4.6.1. Preliminary visit

The initial visit to Umvoti was an informal meeting with the participants, which, aimed at introducing the researcher to the women participants and at explaining the purpose of his study. The researcher emphasized the common ground and shared experiences to create a friendly atmosphere during this meeting, as suggested by (Hurn and Tomalin 2013).

The researcher further introduced himself during the individual interviews, where the researcher explained briefly about the study project to create rapport with individual women participants.

In addition, it allowed the researcher to get a deeper insight and understanding of the current practices and to know people in the ward, thus establishing trust and breaking the ice.

The detailed primary data generation was conducted from February 2019 to July 2019. The researcher provided women participants with an information letter (**appendix 1**) about his study and verbally informed them about steps to protect their privacy. In addition, participants were informed that their real names would not be used, including any details that might lead to their identification, such as their children's names and some specific details that they might disclose.

After the introduction process, the researcher asked the participants questions. The researcher requested each participant to sign the consent form (**appendix 2**). All participants showed a willingness to sign the consent form.

The researcher checked if participants were happy to have the audio of their interview recorded and videotaped. The addresses of each participant were requested so that the completed interview transcript would be forwarded to them. All completed interview transcripts that were sent to participants were in IsiZulu. The completed transcripts were sent to each participant in a self-addressed envelope.

It allowed each participant to return the checked transcript with possible changes to the final transcript. This exercise aimed at allowing the participants to check if the information they had provided was correct, as they had presented it during the interviews.

However, it was critical that before the researcher assumed this study in Umvoti, the researcher made some consultations with the relevant authority structures such as Traditional Authority and other statutory bodies in the area.

The researcher attended the traditional authority meeting, which was carried out quarterly, and all household heads in the area attended it. All six selected wards were under the traditional authority administration.

4.6.1. 1. Observation

Observation was employed as one of the data-generating methods. It entailed watching participants' behaviours, and events in their natural setting as DeWalt and DeWalt (2002) prescribed. Permission to videotape and audio record all discussions during the observation was requested from the participants, and they were requested to complete the consent form before commencing with observation.

The study adopted a non-participant observation to observe women's participation during their field of operation, and the observation schedule was used (**Appendix 4**) and the researcher took notes and videos of their activities.

This enabled the researcher to see how women made a decision or responded to decisions made by others in their field practices. Ten women participants were observed twice in this study, followed by focus group discussions. During observation, the researcher observed women's decision-making application, strategies to cultivate the land, prepare the soil, plant, fertilize, weeding, and harvest produce, interactions the women made with others, and undertook their AF practices.

4.6. 1. 2. Focus group discussions

Focus group discussions involved a limited set of six to ten people who usually share common characteristics such as age, background, and geography (Lotich 2011). In this study, focus groups were the same women the researcher observed to triangulate the findings. There were two focus group discussions during planting season and one during harvesting season. Each focus group discussion took place after the observation. This was because AF practice was an operation farming system, which took place in different seasons. Focus group discussions were held in Umvoti Municipality Offices.

4.6.1. 3. Individual Interviews

An individual interview is a dialogue between two people to understand a research topic (Valenzuela and Shrivastava 2011). In this view, the researcher engaged one-on-one, face-to-face interviews with the participants to generate data from an individual. Semi-structured interview schedules were used (**appendix 6**).

A semi-structured interview is a qualitative inquiry approach, which encompasses a set of pre-planned open questions that enabled the researcher to explore a phenomenon and prompt discussions for further responses (DiCicco-Bloom and Crabtree 2006). The interviewees were chosen from those who did not participate in observations and focus group discussions.

Qualitative interviews provide a deeper insight into a societal phenomenon as they permit the respondents to reproduce and reason on a diversity of subjects in various behaviours (Folkestad 2008; Yin 1994).

Interviews were held after an informed consent form, which covered confidentiality and the right to withdraw from the participants had been obtained.

Table 1: Showing the number of participants for each instrument.

Umvoti Municipality	Observations & focus group	Interviews
Two wards	20	0
Four wards	0	16
Totals	20	16

4.6.1. 4. Field Diary

A field diary to capture all relevant information discussed during the field visit was used to compile the field notes during the qualitative fieldwork process (Thomas 2015). The researcher used a field diary as a complementary source of information, which reminded the researcher of the context of interviews and observations during the transcription and data analysis stages. A field diary enabled the researcher to understand the world in its natural settings.

A field diary enabled the researcher to recall and record participants' behaviours, activities, events, and other observed features during an individual interview process. From a researcher's perspective that was recorded observations, the field diary served as a complementary record of events for comparison purposes.

The researcher intended to compile the field notes to refer to them as complementary evidence to produce an effective interpretation and a deeper understanding of the situation. The researcher maintained a field diary to record necessary information observed during the different data generation methods. In support of this, Flick (2002), affirms that field notes are helpful in data generation, which the researcher might not have covered through interviews.

In addition, it acts as a means of reflection on the researcher's fieldwork experiences. Therefore, this tool enabled the researcher to generate detailed additional data that might not have been possible for the researcher to collect systematically.

Field diary captured information during data generation times, whether during the observation, interviews, or informal talks. Although the field diary acted as an effective tool to assist me in recalling all the valuable information, an audio recording was also used to accurately reflect the participants' verbal and non-verbal contributions. Furthermore, the researcher used a field diary to remind him about the concerns raised during focus group discussions related to the research topic and the research questions.

4.7. Challenges during the study

After completing the pilot study, the researcher embarked on the reflection process to effectively conclude the study. The purpose of reflection was to consider the researcher's challenges during the study process. The key challenge the researcher encountered was positioning the study area. Thapar-Björkert and Henry (2004), contest that the researcher's position in the study influences the research process. The exercise was challenging initially, as women were busy with their regular AF practices. Nevertheless, women participants cooperated during the study process.

4.8. Data Analysis

Data analysis reviews the raw data findings to reach conclusions about the phenomena (Kalpesh 2013). Data analysis is a process that combines all phases of qualitative research, which assisted the researcher in understanding the people and situations investigated (McMillan and Schumacher 2006). It further enabled the researcher to investigate, compare, select, categorize and interpret data to address the initial proposals of the study.

Qualitative analysis entails finding patterns in the data (Lincoln and Guba 2007; Gallicano 2013). It is in this context that qualitative research for this study is preferred. Two main data analysis methods used, were inductive and deductive. Inductive analysis refers to a process of gathering initial, intuitively derived themes after reading and re-reading the data and deductive data analysis applies theoretical concepts to explain the data and its themes (Gallicano 2013).

The deductive method enabled the researcher to organize data generated concerning the theoretical framework thematically.

Thomas (2003), contests that the primary purpose of the inductive approach is to allow research findings to emerge from the frequent, dominant, or significant themes inherent in raw data without the restraints imposed by structured methodologies.

Thomas (2003), contests that there are three primary purposes for using an inductive approach. These critical determinations include the compression of vast and various raw text data into a shortened version, the creation of strong relationships between the research purposes and the summary findings resulting from the raw data, and the development of a theory around the raw data.

Since the study seeks to explore the extent to which women participate in decision-making in AF, the study opted for both inductive (bottom-up) and deductive (top-down) approaches as they complemented each other. The inductive analysis generated intuitively derived themes after reading and re-reading the data. Inductive data analysis enabled the researcher to categorize, interpret and organize data generated concerning themes.

The researcher commenced this data analysis process by familiarizing himself with the data during the initial stages. However, this was because the nature of the study maintained a clear focus on recognizing themes subjective to the theoretical framework. The researcher used deductive data analysis to apply theoretical concepts and explained the data and its themes. The deductive method enabled the researcher to organize data generated thematically concerning the theoretical framework.

4.9. Thematic Analysis

This study used thematic data analysis to identify, analyze, organize, describe, and report themes within generated data (Yin 2013). This kind of thematic analysis is a valuable approach to identifying, analysing, organising, describing and reporting themes within the generated data. Yin (2003) expands that this practice constantly occurs as generated data.

Braun and Clarke's (2006) phases guided thematic analysis for this study as open coding, axial coding, and selective coding. These phases suggest that the researcher familiarizes himself with data generated in the first data analysis phase. To comply with this advice, the researcher submerged himself in the data analysis process, which was done by transcribing each participant's interview sessions manually.

Next, the researcher used thematic analysis to search for themes that emerged as critical to the description of the phenomenon. It was done through careful reading and re-reading of the data. Thematic analysis was used as a form of pattern finding to recognize the data where emerging themes became the category for analysis (Army (2009; Ferdeay and Muir-Cochrane 2016). Therefore, the researcher organized data into response patterns in this context, which was done through open coding, axial and selective coding.

4. 10. My positionality in the study

Based on the researcher's professional capacity as a forester, employed by the Department of Agriculture, Forestry, and Fisheries (DAFF) as Deputy Director, the researcher was responsible for the Forest Development component, focusing on Small Scale Farmers in KwaZulu Natal Province.

The researcher's job status and his experience of women's participation in agroforestry influenced his concerns that women, whose potential could improve their livelihoods, are mostly neglected and marginalized in decision-making in agroforestry practices.

The researcher's experience as an African man working with women in this area has indicated power and control over women's decision-making. The experiences and knowledge that the researcher has gained through his involvement in interventions in African and International Countries motivated him to study and understand women's participation in decision-making in agroforestry. This study is valuable to his work and responsibilities.

The study will contribute to the implementation of the South African Agroforestry Strategic Plan, and will also assist Forestry Development Officials to understand the support that Umvoti Municipality women farmers might require.

4.11. Trustworthiness of the Study

Trustworthiness in a qualitative study aims at supporting the argument that the study's findings are worthy of receiving attention. Trustworthiness is the extent to which results are based on robust research findings (LaBanca 2010). Data trustworthiness comprises trusting the truthfulness and credibility of the data. To endeavour to obey subjects of rigour, the researcher tried to embrace all instruments used during the research (Sinkovic et al. 2008). Therefore, this study applied the concepts of credibility, dependability, transferability, and confirmability to ensure trustworthiness.

4.11.1. Credibility reflects the confidence that testifies to the truth of research findings (Holloway and Wheeler 2002). The researcher employed triangulation, member checking and spent time in the field through observations. It enabled the researcher to check if the data generated reflected what the participants contributed during the data generation process.

Bowen (2009) claims that a study is credible when it presents accurate descriptions and when readers are confronted with the experience, can recognize it. Maintaining the transcript of interviews and the document analysis instrument that would give a complete description of events also allows the reader to recognize any experience the researcher encounters.

4.11. 2. Dependability is an ongoing report of a detailed study finding process over time (Bitsch 2009). In this study, the researcher provided a detailed explanation of the process. It took cognizance of the different forms of data generation, how participants were selected, and their contributions recorded (Tobin and Begley 2004). This study established dependability by using an audit trail, code-recode strategy, stepwise replication, triangulation, and peer examination. These were used to ensure the reality of the study findings.

4.11.3. Transferability is the extent to which the study findings can be transferred to other settings with other participants (Bitsch 2005). In this study, six wards were used, and findings were compared across each ward to indicate how the study could be replicated in different settings. In addition, a detailed description of the phenomenon and the research process will enable other researchers to investigate similar characteristics in other settings.

4.11.4. Confirmability is the extent to which the study findings can be confirmed by other researchers (Baxter and Eyles 1997). Confirmability reflects if the study findings are a true reflection of the participant's findings. This study used an audit trail, reflexive journal, and triangulation for confirmability. The audit trail provides evidence that can be traced from the commencement to the end of the study (Bowen 2009).

This study used a reflexive journal to show the data gathering and analysis process. Reflexivity included assessing the researcher's personal history, perceptions, views, and interests in the study. Member checking assisted in verifying that the data generated were a true reflection of what the participants wanted to say.

The professional language practitioners translated data generated in the participants' first language of isiZulu into English. The translated scripts were crosschecked with another local IsiZulu-speaking student to ensure that the translations were accurate.

4.12. Data Triangulation

Data triangulation is the process of validating data using multiple methods in qualitative research to crosscheck the validity of the data generated (Patton 1999). This study used observation, focus group discussions, and participant interviews for data triangulation. Furthermore, data generation was undertaken at different points to crosscheck the validity of the data

4.13. Ethical Considerations

Ethical consideration interprets the relationship between the facts and theory to obtain specific information into practice (Bless and Higson-Smith 2004).

In this study, ethical considerations are considered concerns that emanate from how the study is implemented. Bless, and Higson-Smith (2004), elaborates that the process and the research results required should demonstrate strict ethical considerations.

Silverman (2000), contests that conducting research is a process, which requires that participants are ethically treated and that their knowledge is acknowledged. Therefore, the researcher realized that he respected the participants' rights, desires, morals, and requirements when conducting this study.

The researcher obtained all the necessary permissions and the institutional ethical clearance before the commencement of the data collection exercise and negotiated the consent to complete a survey in Umvoti Municipality, and the research site was negotiated beforehand with Umvoti municipality and Umvoti Municipality Manager "gatekeeper" (**appendix 7**).

4.14. Conclusion

In conclusion, this chapter outlined the research design and methodology, the paradigm and the research approach used in this research. The qualitative study design was used as a tool designed to address the study topic. Further, the topic reflected high levels of qualities of uncertainty, and very little is known about this subject.

Paradigm and approach were chosen to ensure that the research problem, purpose, research questions, and theoretical frameworks were correctly combined.

Finally, the chapter concluded by reflecting on other significant research components, such as data analysis, which was dealt with through the thematic analysis method and the study's trustworthiness.

Selecting an examination technique relevant to investigation demands was appropriate (Braun and Clarke 2006). Thematic data analysis, which empowered the researcher to categorize the nature and the extent to which women participate in decision-making in AF, was used to assist with the determination of the study

The chapter concluded by drawing attention to the significance of the ethical considerations, which thoroughly discussed the study found, where each of the subsidiary questions addressing the main research question was discussed. These questions included the extent to which women participated in decision-making in agroforestry, how women learned about agroforestry decisions and what educational processes and strategies were in place to enhance women's participation in decision-making in agroforestry.

CHAPTER 5

Data presentation and discussion of findings

5.1. Introduction

The previous chapter discussed the methodology, the design and the approach used to guide this study. It presented various methods used for data generation. This chapter responds to the research findings analysed thematically.

It is structured to display research questions and it offers data related to the questions. The analyses presented in this study incorporate the theories and concepts that are appropriate to the research questions.

This chapter presents evidence generated from Umvoti women participants through observation, focus group discussions, and individual interviews. Each woman participant was allocated a number, and code for confidentiality and anonymity purposes (**Table 6**).

5. 2. Demographic and socio-economic characteristics of participants

5.2.1. Umvoti Population

The population of Umvoti is distributed among the eleven Wards of which only 6 were selected for this study (**Table 2**). Umvoti comprises 60% of the uMzinyathi District Municipality women population, who rely mostly on AF practices to sustain their families' livelihoods. It was realized that Umvoti women dominate the entire population of the Umvoti Municipality population (Umvoti IDP Review 2020).

This portrayed the significant role that women play in AF practices and the decision-making processes. Benin (2006), affirms that women's involvement in AF practice affords them substantial means to alleviate poverty. Hence, the study focuses on women's participation in decision-making in AF.

Umvoti Municipality accounts for approximately 46 % of the youth population of the entire Umvoti Municipality population (Statsa 2011). Thus, this necessitates the presence of youth educational facilities, out-of-school employment opportunities and development programmes.

Table 5.2: Population growth rate % by age group in each participating ward.

Ward No.	Ward Name	Population Per ward	Women population % per ward	Women population Age % per ward
1	Mbulwane	10608	10.29	4.1
2	Matimatolo	9887	9.59	5.2
3	Entembiweni	9596	9.3	3.1
4	Shane	8081	7.83	0.6
7	Nhlalakahle	11314	10.92	15.1
9	Mbuba	4875	8.07	10.0

Source: Census 2011

5. 3.1.1. Age of participants

Women participants' ages varied between 40 to 80 years. **Table 3** below reflects the number, age group and percentage distribution of women participants.

Approximately 98% of Umvoti women between the ages of 40 to 80 years were actively involved in AF practices, and women between the ages of 40 to 50 years account only for 15%, of whom seemed to be less interested in AF practices (Census 2011).

Women are involved in AF practices but excluded in decision-making processes, and the lack of access to natural and financial resources resulted in a large number of women migrating to urban areas for better job opportunities was a contributing factor to women's participation in AF practices (Census 2011). Women participants in the category of 40 to 70 years were expected to play a more active role in AF decision-making processes (Omotesho, Fakayode and Tariya 2012).

Most women who were between the ages of 70 years and above were retired. Some of these women had been working in commercial farms and other sectors (Census 2011). This category constituted 1% of women involved in AF, and they tended to dominate the group discussions.

Table 5.3: Umvoti Population per Age Group Distribution:

Age	Population No:	Average age per group	Distribution %
0-4	9491	9.21	17.5 %
5- 19	33416	32.41	75%
20- 35	15703	15.23	75%
36- 49	19035	18.46	15%
50- 70	8966	8.69	10%
71- 80	13426	13.02	5%
unknown Age	3056	2.98	1.0%
Totals	103093	16,63	33,08%

Source: Census 2011

5. 3. 1. 2. Education

Education levels refer to non-formal, informal and formal education that women participants have attended, grounded around women’s capability to write and read (Statsa 2011). This was measured by women’s attendance level in primary, secondary and tertiary education.

Umvoti women’s participants’ educational levels showed that 33,4% had attended primary education, 38,0% had secondary education, 10,8% had grade 12, 2,7%, had obtained tertiary qualifications and 15% had no form of education (Census 2011).

Women participants comprising 10, 9%, indicated that they had never realised the significance of education (**Table 4**). Thus, the study shows that 38% of women have secondary education. Women participants’ education levels enabled them to gain knowledge and ability that contributed to their productivity and increased food security (Adebayo and Oladele 2013).

Table 5. 4: Education Levels:

Category	No of people	Per centages (%)
Primary Education (Grades 1-7)	45255	33,4%
Secondary Education (Grades 8-12)	21675	38,0%
No Schooling	22666	15,0%
Not Applicable	10907	10,9%
Tertiary Qualification	2590	2,7%
Totals	103093	100%

Source: Census 2011

5.3.1.3. Household Composition

Umvoti household composition exercise was carried out to determine the number of people residing in each household. During the study, 36 households with a substantial number of males and youth who had migrated to urban areas in search of job opportunities and better education were visited.

Consequently, women in the middle ages of 40 to 50 years migrate, following their husbands. The study shows that household composition is 4.4 per household. The prevailing evidence shows that women participants were deprived of access to resources to practice AF and opportunities for growth in AF decision-making (Staatz and Dembele 2007).

5. 3.1.4. Household Income

The study revealed that women participants' household income was very low; hence, 75% of the women population earned less than R1600.00 per month. The other 34.5% of individual households earned less than R500.00 to R800.00, and the remaining portion of 36.0% of individual households had no income (Census 2011).

Those households, who earned between R100 to R400, were unemployed and earned their living through AF practices and other government grants. Those who were earning R801 to R1600.00 per month were employed in the agricultural sector. Thus, women do participate in diverse occupations including agricultural labour, but they are excluded from decision-making (Pal and Haldar 2016).

Umvoti women farmers opted for agricultural work because they wanted sustainable and consistent income.

This confirms the assertion that the socio-economic and cultural environment determined women’s involvement in AF practices (Pal 2014; Pal 2015). This suggests that AF practices contribute tremendously to Umvoti household income, which contributes to Umvoti women’s low-income levels of affordability for the community’s basic services (**Table 5**).

Table 5.5: Source of annual income percentage per household per month:

Income level per household	Number of people per category	Average Income per centage per household	Source of Income
0- 400	52 982	57,3%	Social grants, pensions and other allowances
500- 800	4370	4,7%	Social grants and pensions and other allowances
801-1600	11366	12,3%	Employment and AF produce
1601-8000	3444	3,7%	Employment and AF produce
8000-10 000	1526	1,6%	Employment, AF produce and other
10000 and above	785	0,85%	Employment, AF produce and other
Unspecified	14573	15,77%	Unknown
N/A	947	1,02%	Unknown

Source: Census 2011

5.3.1.5. Employment Status

Umvoti employment status comprises 16, 5% of the entire Umvoti population are employed in various sectors (Census 2011). This reflects the great economic growth intervention requirement, hence, the rate of unemployed people has increased, and has contributed to the increase of the dependency ratio.

Consequently, agriculture and forestry (AF) as a dominating sector in Umvoti, offered 58% of job opportunities to Umvoti society including women and children. Approximately, 5, 7% of the entire women population is employed in the agricultural sector in Umvoti Municipality (Census 2011).

However, women who are involved in AF are constrained in decision-making by the lack of education, access to information and the lack of relevant AF knowledge and socio-economic obstacles in recognizing the benefits of their labour (Kurtus 2012).

Women's involvement in AF practices affords them an opportunity for sustainability, and better quality of AF produces as a substantial means to alleviate poverty (Benin 2006). Thus, women's involvement in AF enables them to develop further through the dissemination of AF information.

5.3.1.6. Climatic Conditions

Umvoti climatic condition is characterized by annual summer rainfall with annual precipitation of approximately 872mm (Umvoti IDP 2016/2018). There is potential evaporation of 1699 mm coupled with 110 mm overflow contained as the situation of the local climate is favourable for AF practices. Umvoti experiences summer rainfall coupled with strong thunderstorms, winds and heavy hail. This commonly occurs during the spring and summer seasons.

There is a considerable increase in temperatures during the summer season to 23°C as the greater contributor to women's AF practices (Umvoti IDP 2016/2018).

The winter temperature drops to a minimum of 2⁰C. Women's understanding of Umvoti climatic conditions was quite significant to the success and profitability of AF practice. The majority (85%) of women participants confirmed that they preferred average temperatures of 14⁰C as the suitable climate for Umvoti women to practice AF.

The knowledge and experience of climatic conditions enabled women to make an informed decision regarding crops to be cultivated in different seasons. Further, this enabled them to practice land preparation before the heavy rains commence. Ogato, Boon and Subramani (2009) cautioned women participants about different AF crops that are to be planted and harvested during the different seasons.

This was based on the productivity of AF products, which might be adversely affected by various factors such as problematic landscapes, acidic soils, regular high heavy hailstorms and population pressure. The field carrying capacity was high, and productive in summer and low and poor during the dry winter months.

Agriculture and forestry (AF) are considered the major Umvoti economic activity, which is described as a suitable commodity for both domestic and commercial use (Census 2011). However, this is constrained by limited AF processing facilities, which have resulted in the exportation of local AF food crops such as vegetables and fruit products to urban areas for marketing purposes.

The uneven population distribution of Umvoti Municipality poses some negative influence and major challenges to the local economic growth, which contributes to Umvoti being classified as economically underdeveloped (Census 2011).

The central portion of Umvoti is covered with great potential profitable farmland characterized by low population density (Census 2011).

It has been recognized that some small farmers, mostly women, are transforming from local production for domestic consumption to commercial farming.

The consequences of that are an escalation of transportation expenses and the absence of educational training facilities that contribute to poor services (Census 2011). In addition, transportation expenses and lack of educational facilities contribute to poor services. There is some empirical evidence, which shows the limited volume facilitates the importance of local economic growth (Census 2011).

This evidence portrays an alarming rate of poverty growth levels within the Umvoti municipality because of low income, lack of access to services, land, credit facilities, and other modes of invention, such as education, employment, and low output. Although AF is considered a major economic activity in Umvoti, the municipality still faces the danger of deforestation, land degradation, deterioration of agricultural yield, and a shortage of livestock feeds (Census 2011).

The location of Umvoti municipality within the district with a high proportion of poverty and is characterized by little economic growth. Thus, this has been predictable to have happened over an extended time.

Women practice AF on the land that has been allocated to them based on customary law by traditional authority for development purposes rather than for their gain, thus, this has no exception for Umvoti Municipality women. The struggle to acquire land including access to residential land allows that land to be allocated to male figures only because of the customary law that governs the functioning of the traditional authorities in rural areas, but women are not consulted when it comes to decision-making about land (Budlender et al. 2011).

5.4. The nature of women's participation in decision-making in agroforestry

To address the first sub-question, the (9) themes were generated and analysed using observation, focus group discussions (FGD) and individual interviews. The process commenced with observation, which, was conducted in Matimatolo and Shane wards, where women participants were observed applying decision-making, strategies used to access the land, prepare the site and the soils and the land, planting, weeding, apply fertilizer, harvest, embarked on post-harvesting, marketing and transportation of AF produce.

Women participants were observed interacting with other women, undertaking their AF practices, and speaking to the policy-makers, and decision-makers during their various participatory gatherings. Although women participants were supposed to ask questions during the meetings, they kept quiet and had their discussions outside the meeting.

Culturally, women are not allowed to talk in the presence of a male or husband, because this reflects disrespect. Thus, women were not asking questions, because of the presence of men.

Women participants were also observed responding to questions they were asked by the decision-makers and policymakers. However, their responses were very shallow and passive.

Generally, several interrelated activities are tangled in AF operation, including the preparation of the product, planting, and harvesting of products (Asenso-Okyere and Jemaneh 2012).

However, before marketing the product, women farmers embarked on the scaling of the product according to the standard grading policies, such as packaging, storing, transporting, providing market information, distributing, and advertising the product to be sold (Asenso-Okyere and Jemaneh 2012).

Umvoti women were practicing weeding manually using hand hoes, steel-shaped tools fitted in the long wooden handles used for hoeing. However, the use of watering cans benefited plants so that each plant received special attention from individual women who could follow up on any possible complications that the plant might experience, such as diseases and pests. Women participants confirmed that they also spent much of their time harvesting and collecting fuelwood, harvesting mature fruits and vegetable crops from the field.

It was observed that most women became so excited during the post-harvesting season because that was the period where they demonstrated their knowledge and experience on how they could separate good crops to be sold to the local market to generate income. They could store and preserve other crops to be used during the next planting season, and for domestic consumption (Audu 2009).

It was also observed that the transportation of AF products improved the quality of life of the rural people, produced a conducive AF market, enabled interface amongst the geographical and economic areas, and unlocked new areas for economic concentration.

Women demonstrated their substantial experience by using Indigenous Knowledge (IK) when practicing drying vegetables during the summer season and storing seed and dried vegetables used during the winter season (Makinde and Shorunke 2013). Women participants asserted that socialization (traditional knowledge), which was referred to as inter-generational knowledge, which was cascaded from the older generation to the next generations, contributed to their well-being (Mutekwe 2015).

Therefore, IK is an essential asset for women farmers because it offers strategies to resolve their learning about AF and to identify educational processes and strategies to enhance their decision-making in AF. The study further revealed that other sources such as friends and peers, including other women farmers, scored 53%, reflecting the second position in the assessment followed by media (print and electronic), which came in the third position with 37% (Kilpatrick and Johns 2003).

Finally, other sources such as observation and experience came to the fourth position with 34%. This concluded that institutions should frequently employ more agricultural experts.

Table 5.6: Women participants participated in observation and FGD, and their number and codes, ages, education levels, and experiences in AF practices:

Participant Code	Age	Education Level	Experience	Wards
2W	57	Secondary education	20	Matimatolo
3W	64	Secondary education	20	Matimatolo
8W	78	No education	40	Matimatolo
5W	78	Primary education	32	Matimatolo
7W	65	Primary education	20	Matimatolo
6W	62	No education	20	Shane
1W	66	Primary education	27	Shane
9W	68	Primary education	22	Shane
10W	60	Primary education	30	Shane
4W	80	Primary education	40	Shane

Focus group discussions were held in Umvoti Municipality Offices, centrally located in Greytown, where they lasted about 90 minutes. All themes in which women participants engaged were discussed, such as access to the land and ownership issues from which women might have benefited, through land allocation by various means. Focus group discussions enabled the researcher to determine how women were discriminated against in the decision-making process regarding land ownership.

Opare (2005) affirms that women are discriminated against for land ownership and land rights by customary laws and other statutory laws that greatly influence women's discrimination. FGD schedule was followed adequately during this process for consistency purposes. It was imperative to be consistent with the findings of this study

Access to land is fundamental to women because it is critical for food production, provision of shelter and community development (Opare 2005). The content about access to land and land rights is attended to in the development projects. Thus, the programmes that have an impact on women's livelihood and food security in rural areas should be addressed.

Women's access to land and land rights and ownership is significant in the sense that their benefits rely mostly on land for their welfare through output, equality, and empowerment (Cox and Magel 2002). Although women participate in AF, producing food crops, particularly, vegetable crops, they lack decision-making powers, hence, they are denied access to land, land rights, and ownership.

Any sustainable development concept is based on access to land and land right to secure ownership rights (Cox and Magel 2002). The preparedness and capability to make savings in agriculture and arable land rely on land security when the community can afford the right to land. Women participants were asked different questions about access to land, and they raised various concerns about their access to land and how they accessed land on which they practice AF.

Another participant said,

Eish.. we are experiencing challenges in accessing the land for AF practices because you are only allowed to access the land if you are married to your husband, but if you are not married, traditionally you are not allowed (3W).

Women participants confirmed that customary laws mandated them to acquire land through their husbands or male relatives for AF activities, and traditional authority confirmed their husbands if they were their wives and whether husbands agreed that women could use the land for AF purposes (UN Women 2001; George et al. 2014).

However, women from different backgrounds of Umvoti provided testimonies on how they accessed the land on which they practiced AF. Testimonies from women participants indicated that they accessed land through marriage, inheritance, succession, land transfer, and purchase.

Access to land is considered to have religious, cultural, and legitimate implications. There is a strong relationship in societies between the decision-making powers that a woman appreciates and women's right to land quality (FAO 2020). Women's inclusion or exclusion in decision-making in AF in poor rural areas is frequently determined by a husband holding the land rights.

Participants confirmed that using the small plots of land allocated to them for AF practice, was inadequate for various food crops production such as cereal and pulse crops, roots, and tuber crops and cash crops such as woodlots. They sometimes consult with their husbands before decision-making for additional land.

One of them had this to say,

Hmm...it is very difficult to access land if you are a woman in rural areas, though access to land is crucial for us as women to generate economic enablement, motivations for investments, facilitate advantage that can influence AF activities and offer concrete substance for financial strength, women are denied access to land (2W).

Women's access to land is limited to food crop production to sustain their family livelihoods. Women participants affirmed that the traditional authority denies them access to land through customary laws. This denies them an opportunity to land rights and it contributes to decision-making in AF activities. FAO (2020), asserts that the absence of adequate supplies for women to have land rights autonomously without their husbands or male relatives is still a challenge.

Traditionally, the land is allocated to an adult male as the head of the household. This normally occurs when that particular male gets married, moves out of his father's household, and has his household. After his father's death, the eldest son takes over the household's responsibilities including the land (Pal 2014).

Land inheritance is the process of taking over the land upon passing it on to the beneficiary, who might be the husband, the father, the uncle, or the grandmother (Pal 2014; Pal 2015). This process of land inheritance might be from a father, a mother, or a husband. Umvoti is characterized by a high number of female households caused by a high rate of male migration, separations, widows, and unmarried women.

Another participant said,

We are women who have never got married but living with our children on this small piece of land, which we inherited from our fathers after their death, but the family male figure tried to evict us citing that we were not allowed to occupy that land because we were females and unmarried (4W).

Participants confirmed that they only had access to the land for AF practices, but they were denied the right to the land. 20% of Women participants agreed that they inherited their land after the death of their fathers/parents, and the family wanted to evict them because the traditional law prohibited the female to occupy land if they were not married. One of them said,

We are single and unmarried women who inherited the land from our mothers, after the death of our fathers and our mothers died after inheriting the land, now we are the householders and obliged to make decisions as household heads (11W).

Even though they had inherited the land, the right to land remained with the male figure in the family. Thus, women's participation in decision-making in AF practices was constrained; hence they did not have the right to the land.

Although women inherit the land from their deceased parents, it depends on the people occupying the land and what they want to do with the inherited land (Sanders 2020). However, women asserted that they sometimes experienced challenges in making decisions on the inherited land where family male relatives were involved.

During the focus group discussions and individual interviews, women participants acknowledged the increase in women's access to land through land transfer. Land transfer is the process through which the land is inherited wrongfully by any family member before the family agrees on who is responsible for the deceased's estate (Reddy and Moletsane 2009).

A participant said,

Eyyy...I am the eldest daughter in the family, unmarried, and my parents died two years ago. I had no problem succeeding with my parents in utilizing the land for AF practices. Therefore, I acquired this land through this succession (8W).

Based on the intestate succession ordinance, the deceased property usually goes to the deceased's blood relatives, who may be a brother or father, depending on a complex interplay of ethnicity (FAO 2018). However, it depends on whether the wife in question a party to the civil or customary marriage and which marital assets is is were applied to the civil union (Ugo, Luca, Joachim, Alberto 2011).

Succession is the process of identifying a qualified beneficiary who takes over after the death of the husband or father (Buddlender et al. 2011). Traditionally, it is common in prominent families where the father and the son share the same household. Although in normal circumstances, the eldest son in the family becomes the beneficiary after the father's death, where the sons are not married, the mother remains the beneficiary and the household head.

Although women, through customary laws, are excluded from land succession, they are entitled to inherit their husband's land. Women are the household heads responsible for decision-making processes. In Umvoti, most households were headed by females because of the high rate of men migrating to urban areas for job opportunities, death, separation, and divorce.

Land in traditional authority is not for sale to any person, and it is only reserved for local community development purposes. However, the South African Cabinet adopted the Comprehensive Rural Development Programme (CRDP) in 2009, which proved to be an expensive and ineffective distraction. The comprehensive Rural Development Programme mandated the municipality to coordinate the developmental investment in rural areas.

These were means to endeavour and consolidate the capability of traditional authorities to produce more excellent benefits compared to the existing limiting traditional or cultural style of rural development. The concentration to improve women's participation in decision-making in AF practices for food security in the households, should be the high priority and remain the highest concentration for women to sustain their family livelihood.

One participant said,

Whoa...eish...although we are women interested in small-scale farming as part of AF practice, approached the traditional authority about the land and explain my situation and our willingness to purchase the land for AF activities, the traditional authority denied us that opportunity to purchase land and we were told that there was no land available for sale, and even if the land was available women could not buy any land for any purpose (7W).

In rural areas, it is a norm that if a person allocated land moves to other parts of the area, the traditional authority takes that land back to the traditional authority and allocates it to other families in need of the land. Holomisa (2019), contests that traditional land is under the custodians of the traditional authority administration.

The study determined that women were participating in land preparation, site preparation, site preparation, ploughing, harrowing, soil levelling, planting, manure application, seed/seedlings, nursery practice, weeding, harvesting, post-harvesting, marketing, and transportation.

Land preparation is used to clear all bush and brushes, rubbish, and unwanted vegetation of different sizes and pithinesses (Liyama, Neufeldt, Dobie, Njenga, Ndegwa, and Jamnadass 2014). This process is significant for women participating in decision-making in AF activities. They are significant contributors to the AF space and they make decisions to sustain their households' livelihoods.

After the researcher had had a lengthy consultation process with Umvoti women, they reflected that their participation in decision-making in land preparation depended on the size of land allocated to their households. In most cases, women were allocated a tiny piece of land for agricultural purposes. Therefore, their involvement in AF activities was limited to food crop production and home garden projects.

One participant had this to say,

Eish...this is our site allocated to us by the traditional authority to practice AF as a women's group. Through our formal structure, we have decided to embark on a cleaning process where we are removing all unwanted vegetation and debris and chopping down old trees (7W).

Land preparation in most cases is considered men's domain because of its nature, which requires physical energy. They usually carry it out themselves as women because some women are widows, singles, divorced, or separated. Most of the men in the area are migrant labourers (Chayal, Dhaka, Poonia, Tyagi, and Verma 2017). Men are always away from home, seeking job opportunities in urban areas and cities.

Site preparation is an operational method that is extensively employed to expedite the establishment of a desirable AF practice (Fernandez et al. 2015). Site preparation activity succeeds land preparation, which is the removal or reduction of competing vegetation and eradication of undesirable trees, logs, and debris in a demarcated area.

Site preparation prepares actual soil to stimulate plant growth and the required vegetable crop or tree (Fernandez et al. 2015). Site preparation encompasses eradicating all competing vegetation, which can be carried out manually, chemically, or mechanically. Women of Umvoti embarked on on-site preparation to expedite the establishment of required food crop production and cash crops.

Another participant said,

Hmm...we normally have our home garden meetings on quarterly bases where we make decisions on the methods of site preparation for different types of crops to be cultivated for domestic consumption and marketing purposes to generate income to purchase small items and health care purposes (7W).

Women had no choice but to select the best option from the pull of decisions provided by decision-makers for implementation purposes (Pal and Haldar 2016). Decision-makers would offer different levels of participation where women were heard but excluded from decision-making and ensure that women's opinions were heeded by the elites or by those who were influential under their political status.

Women's ability to have their voices heard is inhibited by poverty, discrimination, lack of their rights to consciousness, lack of government interventions, and inadequate power at a low level (DFID 2010). However, this concept reflects women participants' views of the costs and profits of their participation. Authority reflects that women's and marginalized groups' exclusion in decision-making limits their participation.

Participants agreed that they participated in the home-based garden meetings where they were invited by the decision-makers to discuss and decide on-site preparation methods for different crops to be cultivated. That was an administrative level where women were informed about the decisions, which decision-makers had decided upon (Alao and Shuaibu 2013).

This is what one woman participant had to say:

Uhhh...we realised that there is a necessity to establish a formal structure committee through our existing home garden project, which will guide us in participation in decision-making concerning AF activities and types of crops to be cultivated (10W).

Women participants acknowledged that AF practices experience and household financial contributions through AF activities lacked extension services. However, women participants affirmed that they decided on several pre-harvest and post-harvest activities, which predominantly affected production, processing, and distribution (Enete and Amusa 2010).

Participants agreed that their husbands were the primary decision-makers as the heads of households. Socioeconomic factors affected their contribution to household decision-making (Enete and Amusa 2010).

This is what they said:

During our site preparation, we made collective decisions as women to divide our plots into small plots to accommodate different crops in one plot because the areas allocated to us for AF practices are usually small (1W).

The participants confirmed that they divided themselves into different groups where the other group produced cabbage, spinach, and carrots, other group produced root and tuber crops, but all of them would produce cereals and pulse. Those who had adequate space could still produce cash crops but on a tiny scale as a cash crop is a male-dominated crop.

Women's decision-making in the AF space requires various interventions, ranging from site preparation, ploughing, planting, weeding, and harvesting the AF products (Enete and Amusa 2010). These interventions determine household needs based on the type of commodity, land structure, and the growing season. Women may not decide on ploughing, as turning the soil into the required soil depth level before planting the anticipated crop.

The participants were requested to testify if they participated in ploughing operations as part of AF practices, and how they made decisions related to ploughing operations, and they responded in various ways.

One of them had this to say

Yeah.... we have started with a manual ploughing process in order to get ready for the planting season. It is our culture to plough the area and leaves it to rest for about two few weeks and come back to proceed with the planting operation depending on the type of crops and trees to be planted (11W).

It is critical to determine how women engage in decision-making in household AF practices (Enete and Amusa 2010). Women's participation capabilities and lack of access to resources influence their decision-making processes. However, there are assumptions that women's involvement in decision-making in AF practices is poorly understood, as this differs from region to region.

There are various ways of ploughing operations: manual or mechanical (Enete and Amusa 2010).

Normally, husbands, as household decision-makers, offer different levels of women's participation in ploughing operations. Women may be heard but excluded from decision-making on the methods to be used, or husbands ensure that women's opinions are heeded by the elites or by those who are influential by their political status (DFID 2010).

The participants confirmed that, by using their knowledge and experience in manual land work, ploughing produces good results instead of ploughing mechanically, which poses a danger to soil compaction. They confirmed that because of the size of their plots, they often use hand hoes to plough their lands. In the more prominent families, they use oxen to plough their lands. Erkossa (2005), affirms that ploughing of land in preparation for planting, depends on the type of crops to be cultivated, the depth of the root crops, and the nature of the soil structure.

Harrowing operation in home garden projects, as part of AF practices, is crucial to break the soil into its delicate parts to allow the seed to germinate readily. Women took cognizance that harrowing before planting desired crops was essential. Thus, this made women believe that harrowing was the final phase in soil preparation. Thus, seedbed preparation and finishing is very light soil cultivation, which should be assumed to accomplish the desired soil condition.

The participants provided different testimonies on why they carried out harrowing after-land ploughing.

A majority of the participants agreed that they collectively decided to practice harrowing as part of AF practice in their plots as the final step of site preparation, and further asserted that as they were women farmers participating in AF activities, harrowing was used to level the soil in preparation for transplants from seedbed and seedlings planting.

One of them said,

Uhhh...we have realised the need for harrowing after the ploughing because this operation softens the soil and enhances the soil aeration and promotes water infiltration (3W).

Despite women's critical contribution to the family income through productive activities, no recognition is given to them as essential contributors, and their contribution is not recorded (Rachel 2014; FAO 2014; UN Women 2022). The overview of some studies conducted in India showed considerable variations in women's involvement in the decision-making process in different parts of the country, especially in rural societies.

In rural families type and size, caste, size of landholding, socio-economic status of the families, education level of rural women, their employment status, and rational position, affect their involvement in decision-making (Rachel 2014; FAO 2014; UN Women 2022).

Soil levelling is the process of elevating the soil and confirming that the soil depths released are uniform over the field. This operation protects fertile top soils against erosion by strong winds or heavy rainwater. Soil levelling enables women farmers to maintain consistent water distribution during irrigation and prevent moisture loss. This is what they had to say,

Soil levelling is very crucial to us as women in our plots because we have realized that this operation enables us to prepare seedbeds and have the soil well prepared before we can plant our seedlings in the soil and enhances water infiltration and soil nutrients, and make it available to trees or crops after planting (15W).

Soil levelling extremely contributes to consistent water circulation (Nagpal 2016). Women participants confirmed that they carried out soil levelling to protect the fertile top soils against strong winds or heavy rainwater erosion. Further, soil levelling enables women farmers to maintain water consistency distribution in the fields during irrigation and reduce soil moisture loss during water evaporation in the root zone.

Furthermore, soil-levelling operation enables them to elevate the soil and confirms the soil depths to release its uniformity over the field (Nagpal 2016). One participant said:

Hmm...the land that is allocated to me to practice AF is not good and fertile, so it requires a lot of intensive preparation including levelling to further break up the soil in preparation for the cultivation of different crops (5W).

The women acknowledged that through their knowledge and experience, they had learned how to carry out soil levelling on their small household plots using their hand hoes. Further, they acknowledged that their participation in decision-making as a women's group had been helpful in AF practice. One of them said:

Eish, our problem is that we lack formal structures representing us as women in the traditional council, hence we use our women's group with full bargaining powers (9W).

There was substantial concern about enhancing women's participation in decision-making, which can only be achieved through formal structures that would create a conducive environment for women's voices to be heard (Meinzen-Dick and Zwarteveen 2001).

The planting operation commences in late August, September, and October, covering only two seasons (Pal 2014). Planting operation requires healthy seed/seedlings, produced from a good and well-managed nursery, equipped with an adequate supply of water, sufficient manure application, and weed-free.

Planting is regarded as women's responsibility, hence, their participation in AF is mainly through home garden projects, where they produce food crops as a women's group and use this platform for decision-making. Women are constantly deprived of equivalent access to land and land rights under male-dominated structures, but they use the plots allocated to them for AF practice purposes (Rachel 2014; FAO 2014; UN Women 2022).

Cultural oppression contributes to women's lack of involvement in decision-making in AF practices (Schiele 2005; UN Women 2022). Thus, failure to involve women in decision-making is perceived to be the main contributing factor prohibiting them from adopting AF technologies. One participant said:

Mmm...it is crucial that we made decisions as women using our home garden project structures to decide on the types of crops that we can plant, even if we plant them in our small plots, but to avoid the duplication of planting the same crops, we allocate different types of crops to different members within the group, so that when we sell the surpluses we can buy from each other within the group and have enough for our domestic consumption (16W).

Women are actively involved in food crop production and less in cash crop production because their husbands are more interested in cash crops because of their commercial value (Amonum, Babalola, and Agera 2009). Women participants raised grave concerns about selecting suitable crops for individuals because of the traditional methods and the sizes of areas allocated to them.

However, they confirmed that they took climatic conditions, topography, soil fertility, and soil drainage into consideration when deciding on planting operations. Amonum et al. 2009), assert that women's experience and the knowledge they share during their decision-making meeting enable them to realize that considering all relevant factors have equal benefits and contribution to all members to produce an attractive AF product. One of them said;

Ohh...yes... we make decisions during our home garden project meeting, as a women's group to concentrate on the planting of fruit trees and vegetable crops because vegetables are regarded as a staple food that provides protein to those who are vegetarians whereas meat is scarce. Further, as a women's group, we considered fruits and vegetables as a major source of income and grew up with our mothers doing it in our father's lands (12W).

Women considered certain types of food crops and fruits as seasonal, thus to be consistent in planting trees and vegetable crops, they categorized them into winter and summer crops (Amonum et al. 2009).

However, women realised that the lack of extension services was the contributing factor to the lack of active participation in AF practices, but they used their experience and knowledge as the best option to achieve their seasonal planting consistency. This is what they said:

Eyyy...we produce food crops manually such as potatoes, hot pepper, cabbages, and tomatoes, but the use of mechanical means is impossible because of the topography and the lack of access to credit facilities (2W).

The participants affirmed that their primary focus was on growing staple crops and vegetables for domestic consumption and the sale of surplus. Thus, the selection and adoption of the crops to be planted should determine the income to be generated by marketing the surpluses of AF products such as food crops and fruits. One participant had this to say:

Ohh...yes... we make decisions during our home garden project meeting, as a women's group to concentrate on food crop production mainly because vegetables are regarded as a staple food, which provides protein, instead of scarce meat, particularly to those who are vegetarians. Although we also produce cash crops on a minimal scale, we considered fruits and vegetables as a major source of income (12W).

They agreed that they made decisions about planting and managing food crop production during their women's group discussion meetings. Women participants agreed that planting fruit trees and vegetable crops was their responsibility because of the sizes of the areas allocated for AF practices purposes (Amonum et al. 2009).

The participants confirmed further that with their knowledge and experience in AF practices, their concentration would be on more food crop production and fruit trees. However, fruit trees as cash crops are mainly the male domain because of their commercial value. One of them said:

Although we are involved in food crop production, we also play a significant role in small livestock such as poultry or chickens, goats and pigs to improve the financial conditions in our households. Goats and chickens are in demand in our community where the community celebrates their traditional rituals and other domestic functions and for local consumption (11W).

Nursery practice is regarded as the source of seedlings for AF practice that produces different types of plant material, contributing to women's involvement in decision-making in AF practices (Alkire, Meinzen-Dick, Peterman, Quisumbing, Seymour, and Vaz 2013). However, a well-maintained, equipped, and managed nursery can attract women who participate in AF practices because of good and healthy transplant availability.

The participants agreed that they would prefer to prepare seedbeds in their existing home garden plots because of the lack of resources, such as suitable land for nursery establishment, access to credit facilities, education, and extension services (Buyinza and Opolot 2016).

One participant said,

The seedlings are very expensive from commercial nurseries, and the transport costs are very high, hence the local municipality and the government are failing to support us with the nursery structure and provide us with extension agents to assist us as women farmers, thus we prefer to prepare seedbeds in our plots to germinate vegetable seedlings (14W).

The participants confirmed that they did not know the nursery practice because they lacked knowledge of nursery practice, which should be provided by government agents through extension services. However, embarking on nursery establishment, required financial support, which was lacking in AF practices. It is costly to run a nursery hence, it is labour-intensive.

Sometimes, those with sufficient funds purchase seeds and seedlings from nurseries or agricultural shops. Women participants confirmed that they had a vast knowledge of seed preparation and storage, which they used during the planting season. They were asked which seed they typically prepared and stored for future planting and which seedlings they purchased from commercial nurseries. They responded in different ways. One of them said:

Hmm...., we collect seeds from the pumpkins, butternuts, squashes, beans and maize and dry them and store them in a safe and cool place to be planted as seeds directly in the soil during planting season (7W).

The majority (70%) of participants confirmed that they used their experiences and knowledge in AF to decide on the types of seed crops to be dried and kept in a relaxed and safe place for the coming planting season.

This enabled them to avoid purchasing seedlings from commercial nurseries but used the seed that was harvested and stored in a safe place.

The Participants confirmed that they played a significant role in food crop production. Therefore, their focus was on vegetable seeds, cereal and pulses, root and tubers, and fruit trees. One of them said:

In most cases, we as women make decisions through our women's group discussions; we decide that we need to prepare seedbeds where we are going to germinate our vegetable seed (6W).

The participants confirmed that they could not purchase seed/seedlings from commercial nurseries because of financial constraints. They decided to prepare seedbeds in their home gardens, where they practiced AF.

They agreed that they met as a women's group to discuss what type of vegetable crops they would cultivate. Owing to the lack of extension services in the study area, participants used their experience and knowledge to prepare seedbeds (Iannotti 2019).

Marketing is the process of various services ranging from harvesting to the selling of the harvested product from the field of operation (Asenso-Okyere and Jemaneh 2012). However, this process might be the product from the AF farm to the market or the customer. The marketing of AF products encompasses the preparation, consolidating, and direct handling of AF produce to satisfy the customers.

Generally, several interrelated activities are tangled in this operation, including the preparation of the product, planting, and harvesting of products (Asenso-Okyere and Jemaneh 2012). Prior to marketing the product, women farmers embarked on the grading of the product according to the standard grading policies, package, storage, transport, provide market information, distribute, and advertise the product to be sold (Asenso-Okyere and Jemaneh 2012).

The term encompasses the complete variety of supply chain operations for AF products, whether through an ad hoc or shared AF system (Asenso-Okyere and Jemaneh 2012). Although Umvoti women's involvement in AF practices is mainly for domestic consumption as they anticipated, the marketing of AF products surplus provides them with some income-generating opportunities to purchase small household items for domestic consumption.

The participants confirmed that they had been participating in the AF marketing space for quite a long period but on a minimal scale. Their focus was more on marketing processed and unprocessed AF products and making their own marketing decisions in this space.

This is what they said:

Uhhh...before we embarked on post-harvesting operation, we properly processed the product according to the required standard commencing with scaling of the product from our plots to the transportation of the product. However, our involvement in AF products post-harvesting operation was mainly food crop products for both domestic uses to marketing (3W).

The majority (98%) of participants agreed that they discussed their AF product marketing strategy as their most significant accountability. They confirmed that their roles in AF product marketing were essential, hence, they undertook various AF products, particularly, food crop production, marketing, and processing activities.

There was a perception that women dominated the AF product market because of their extensive involvement in supplying AF products such as food crops produced from their field (Asenso-Okyere and Jemaneh 2012). This is prevalent in poor rural areas such as Umvoti, where women flock to the nearest food markets to sell or purchase AF products for their domestic consumption.

The participants confirmed that the marketing of fuelwood and animal food such as fodder was their responsibility. In addition, the management of livestock has been realized to be women's sole responsibility, especially during the absence of their husbands. Poultry and goats were their preferred product for marketing purposes, hence, chickens and goats were in demand and they could be sold at any required time to generate quick and frequent income.

Women's decision on marketing strategy was based on their knowledge and experience in poultry production (Asenso-Okyere and Jemaneh 2012). Women make decisions based on their understanding of what works best for domestic requirements. The participants commended poultry because it required less investment and was always kept within the households as an activity that women could take care of, while busy with other activities in the household as the household caretaker.

During the individual interviews, which followed focus group discussion, using semi-structured questions, to determine the nature of women's participation in decision-making in agroforestry and to generate understanding about the research topic, the same themes were generated and analyzed. Individual interviews are an interchange between two people (Valenzuela and Shiravastiova 2008).

Table 5.7: Women participated in individual Interviews numbers, and codes, participant age, level of education, and ward

Participant number and Code	Participant Age	Participant Education level	Ward
1W	79	No education	Mbulwane
2W	80	No education	Mbuba
3W	71	No education	Mbulwane
4W	69	Primary education	Nhlalakahle
5W	78	No education	Mbuba
6W	78	No education	Ntembisweni
7W	81	No education	Ntembisweni
8W	77	Primary education	Ntembisweni
9W	78	Primary education	Mbuba
10W	69	Primary education	Mbuba
11W	69	Primary education	Ntembisweni
12W	76	Primary education	Mbulwane
13W	66	Primary education	Mbulwane
14W	59	Secondary education	Nhlalakahle
15W	79	No education	Nhlalakahle
16W	75	No education	Nhlalakahle

The study determined that, generally, in rural areas, women have no access to land, which is an essential productive resource in AF practices markets (UN Women 2001). The procedure that categorizes access to land, and how the authority controls the land are disseminated amongst the society members, who significantly affect how professionally the land is employed, considering poverty and level of discrimination in society.

One participant had this to say

Eish.. it is a challenge for me to access land, for AF practices because I am not married, but I have children to look after, and there is no employment I only depend on piece jobs from my neighbours who might require a person for a day to assist them in their plots (3W).

The level of gender discrimination in the land allocation process is a significant contributing factor to land underutilization (UN Women 2001; Rachel 2014). 4, 9 % of women participants agreed that all unmarried women had no male relatives and had challenges accessing the land. Women are denied land rights and ownership. However, unmarried women participants in the traditional authority areas asserted that they were denied access to the land.

Women communicate with other women through women's group discussion meetings, where they negotiate for plots of land to be allocated to them to participate in food crop production to sustain their families (UN Women 2001; Rachel 2014). Customary laws contribute to women's lack of access to land, especially unmarried women.

Ranjan and Hedija (2004) affirm that women participate in decision-making in AF practices to produce food crops; hence, their access to the land is limited to food crop production. Women's lack of access to land and the hostile customary laws of access to land is a major contributing factors to poverty and hunger (UN Women 2001; Fetcher 2016).

Women from different backgrounds of Umvoti provided testimonies as to how they accessed the land on which they practiced AF. Testimonies from participants indicated that they accessed land through marriage, inheritance, succession, land transfer, and purchase. Nothing was said about access to the land for AF purposes.

A participant said:

We often spend long hours on domestic chores and unpaid and paid labour without training and support. Still, if we can be provided with training, we can produce more food for our households and sell the surplus for income generation. (1W)

The majority (80%) of women participants agreed that they were invited to the meetings organized by decision-makers. Normally, those were informative meetings, where women were allowed to share information with the decision-makers concerning their economic problems (Sundaram 2002).

However, women realised that this was a "top-down" kind of approach that decision-makers assumed was the appropriate entry point to embark on discussions with the women. Women were informed about the decision maker's intentions regarding their participation in the AF space.

Women participants claimed that the top-down approach was part of the manipulation, which was not excellent; hence, this did not yield any positive results as the decision-makers made recommendations for resolving women's economic problems.

The participants had feelings that they were manipulated, and the decision makers' objectives could not capacitate them in decision-making participation. The participants claimed that their involvement in those meetings denied them an opportunity for decision-making in AF, hence, it was limited to food crop production, cash crop, and small livestock management.

Their lack of participation in decision-making in AF activities contributed to their lack of opportunities to air their views and opinions. Women participants perceived this as having adverse effects on their ability to participate equally with men in committees that governed traditional authorities and procedures.

Access to land is considered to have religious, cultural, and legitimate implications. There is a strong relationship in societies between the decision-making powers that a woman appreciates and women's right to land quality (FAO 2020). Commonly, a husband holding the land rights frequently determines women's inclusion or exclusion in decision-making in AF in poor rural areas.

The right to participate in AF practices decision-making relies on the husband's whim as the head of the household. Women participants were asked to elaborate on how they accessed land on which they practiced AF.

This question was directed at all women participants, regardless of their marital status. The participants in their testimonies reflected that they acquired land through various means such as marriage, inheritance, succession, and transfer (FAO 2020).

One of them said:

Eish...as much as we like to participate in decision-making in AF practices actively, our tradition prohibits us from acquiring the land without getting married, thus, unmarried women are denied access to the land in rural areas (13W).

The study concentrated on Umvoti women, hence, they were responsible for food crop production at various levels of their lives, and their access to the land was denied. This has a great contribution to their lack of participation in decision-making processes. Nevertheless, this phenomenon is common in rural areas such as Umvoti, hence, it is influenced mainly by class, age, education, household size, and position within the household.

FAO (2020) affirms that women's involvement in decision-making in AF practices varies according to the appropriate community. Women participants alluded that customary laws denied them access to the land and land rights, thus this contributed to their exclusion in decision-making in AF practices.

One of them said:

Eish...as we are in poor rural areas, we lack adequate education facilities, which contributes to our illiteracy problem, and our culture previously did not allow girls to go to school because our parents had a belief that girls would get married and give birth to their children and further remain at home for domestic work (3W).

The participants claimed that socio-economic and cultural factors greatly influenced their decision-making in AF practices. The participants confirmed that customary laws mandated women access to land through marital status or sometimes through their male relatives such as fathers or uncles, but in most cases through their husbands after marriage.

Women's participation in decision-making in AF activities is limited by a lack of access to resources such as land, level of education, extension services, and credit facilities (Duncan 2018). The participants affirmed that AF practices in rural areas largely determined community development, but this depended on economic status.

Economic growth is accountable for forming a diverse group of people in society, which may be entrepreneurs, businesspersons, and medium and poor people. Women's involvement in economic factors may renew rural areas and transform them into a better societal form.

This is what one of them said:

Oh ...yes...I acquired this land from my deceased father, but I was only allowed to use it for AF practices. I was denied the land rights as always remain with the male relatives, who was my father's brother who was supposed to make decisions (13W).

98% of women participants agreed that they had access to land through their male relatives, either fathers or uncles, to practice AF, but they were denied land rights. These were all single, separated, widows, and divorced women. Traditionally land rights and ownership remain in the male domain, yet women are responsible for food security and poverty alleviation to sustain their family livelihoods (UN Women 2012).

Although women had access to the land, their nature differed from their male counterparts, hence, men were perceived to have entire land and land rights, but women were only afforded restricted or no land rights (UN Women 2012). Men or kinship groups under men's leadership hold Land rights; thus, women access the land right through a male relative, usually a husband or father.

Women are obliged to facilitate AF product sales and negotiate how the income generated is spent (UN Women 2012). The participants confirmed that once a woman got married to a new family, they had access to land and household responsibilities, but this did not provide them with land rights. The land was allocated only to a married man and became responsible for all household decision-making processes.

Customary laws often deny women autonomous rights.

Because women are often the primary household food providers through AF projects, they are usually denied direct access to land. They are the ones who have the most supervision of AF activities and play a significant role in food crop production. This confirms that in traditional authorities, and customary laws, women's straight access to land through purchase or inheritance is restricted.

One of them said:

Uhhh...soon after we got married to my husband, we were allocated this piece of land to establish our household, and we moved away from the husband's family. This is a norm that when a couple gets married must get their household. I am practicing AF in this area (3W).

Most women accessed land soon for AF practices or establishing household garden projects after getting married. However, it is an African culture that when a man or son gets married, he must move from his family and establish his household with his new family (Wondafrash, Tilahun and Girma 2011).

The participant said:

Oh...yes, it is a common practice that women access land through their husbands after marriage because traditionally, it is the women's responsibility to provide housekeeping activities including food crop production in the households to sustain their families (6W).

The participants confirmed that once they got married to their husbands, they had land for agricultural practices. The participants agreed that their access to the land was through their marriage, but they were denied the right to the land that remained with the husband's household head.

80% of Women participants agreed that they accessed the land through marriage, but this did not provide them with land right. Land rights remained with the husband, who was always the head of the household and remained responsible for decision-making in the family. The participants agreed that customary laws deprived them of land and land rights access.

Customary laws mandate husbands, or household male figures to retain the land and land rights (Wondafrash et al. 2011). The lack of women's access to land and land rights negatively affects women's participation in decision-making in AF practices. The participants confirmed that they could only access land for AF activities such as food crop production.

Although women participants acknowledged their access to land through marriage, the issue of non-participation in decision-making about AF space was their great concern. Bogale et al. (2011), affirm that husbands make their own decisions about the land on which AF is to be practiced. The participants perceived their exclusion from decision-making in AF activities as the main obstacle to decision-making.

This is a common practice in Umvoti because the area is still rural, and the land is still under the traditional authority administration and is controlled by the male as the decision-maker in the household. The participants confirmed that they critically considered all women who took part in AF practice decision-making regardless of their marital status.

This included married women, because their husbands were involved in migrant labour, separated, widows, and divorced.

All of those women participants were members of home garden projects, which formed part of AF practices. Yemisi and Aisha (2009), affirm that women farmers joined different women's groups to connect the gender gap between men and women farmers.

Women participants confirmed that they used women's discussion groups that they established as a platform to make decisions about their home garden projects as part of AF practices. These platforms have contributed enormously to improving women's participation to stimulate their needs in AF practices.

Women believed that their access to land entitled them to participate in decision-making in AF activities. Umvoti area is the most rural area under the traditional authority administration, and the decision-making processes are still governed by traditional authorities, and still dominated by males.

Women's representation in these traditional councils is very minimum because women are not considered for decision-making processes. Women's enhancement in persuading institutions and organizations to create a conducive environment for their voices to be heard in decision-making is a growing concern (Pal and Haldar 2016).

Women's participation in decision-making would enable them to access essential resources such as land rights. Generally, women's lack of access to land and land rights prohibits them from participating in decision-making in AF activities (Pal 2014; Pal 2015).

However, they have realised that their participation in AF decision-making processes is consistently underestimated and ignored because their primary focus is on informal rather than formal decision-making processes.

Traditionally, the land is allocated to an adult male as the head of household, and this normally occurs when that particular male gets married, moves out of his father's household, and has his household, or after his father's death, the eldest son takes over the household's responsibilities including the land (Pal 2014).

Land inheritance is the process of taking over the land upon passing on of the beneficiary, who might be the husband, the father, the uncle, or the grandmother (Pal 2014; Pal 2015). This process of land inheritance might be from a father, a mother, or a husband. Umvoti is characterized by a high number of female households caused by a high rate of male migration, separations, widows, and unmarried women. Women participants in an individual interview claimed that:

I am a single woman who inherited the land from her mother, and my mother died after she inherited the land from her husband and we were only females at home, so I inherited this land from my deceased mother (11W).

Mostly all women participants who were household heads agreed that they inherited land from their husbands after their husbands' deaths and their husbands' deceased intestate (Pal 2014). In rural areas such as Umvoti, where land is still under the traditional authority administration, it is expected that land remains a man's business, but when he is deceased, the wife takes over the household and becomes responsible for any decision-making in the family.

One of them said:

Eyyy...I am a widow who has spent most of her time practicing AF on the land that was allocated to my husband, after his death, I inherited this land to continue using it for agricultural activities (2W).

Then participants confirmed that if they inherited the land after the death of their husband they had access to land but they were denied the land right. However, in cases of unmarried women residing with their mothers, they inherited the land from their deceased mothers as their parents. Furthermore, this enabled women to make informed decisions concerning AF activities (Pal 2015).

The participants confirmed that their land inherited after the death of their parents provided them with access to land in which they were practicing AF, even though the land was still administered by the male primogeniture principle (which is the right of succession belonging to the first-born child (Pal 2014).

This principle mandates the eldest son from the family to inherit the land or estate of the household head after his death. This principle excludes other family members. However, other women participants confirmed that, despite this principle, they inherited the land after the death of their parents (Pal 2015).

40% of women participants agreed that they inherited the land from their deceased mothers, who were not married. However, most of the women in the households inherited land from their mothers. It is essential to reflect that most of those women were unmarried or single with children and their fathers deceased without having a son.

The Constitution of South Africa (RSA 1996) asserts that excluding women from accessing land and land right is unconstitutional. Abebe and Mulu (2017), affirm that customary laws deny women an opportunity to access the land, land rights, and ownership. Hence, the exclusion of women invades their potential right to equality and dignity.

The exclusion of women from accessing land and land rights leads to the lack of participation in decision-making processes in development programmes, particularly AF practices. The participants agreed that their access to land and land rights would allow them to be actively involved in the decision-making processes at all levels. Women participants were further asked who had a right to the land or control over the land. Their responses were similar, that they did not have a right to the land.

This is what they said,

We as daughters, inherit our land, but our sons use their wives to utilize the inherited land. This is very pain full because our sons still maintain that by their positions within the households they remain the decision-makers after the death of their fathers.

The majority (80%) of women participants who had access to the land confirmed that they inherited the land from their deceased parents, and they could not retain the right to the land because their married brothers gave the land to their wives. Peters (2010), affirms that although daughters inherit the land from their deceased parents, their brothers allow their wives to utilize it for AF practices.

The right to the land remains with the family male figure (Rheinstein and Glendon 2016). Although women inherited the land from their deceased husbands and had access to the land for AF activities, and were responsible for household decision-making regarding AF practices, they were still ignored (Rheinstein and Glendon 2016).

During the individual interviews, women participants acknowledged the increase in women's access to land through land transfer. Land transfer is the process through which the land is inherited wrongfully by any family member before the family agrees on who is responsible for the deceased's estate (Reddy and Moletsane 2009).

The state executor would conduct the process of land transfer from the previous householder, through the traditional authority, who should intervene and make decisions about the land in question. Thus, with the recommendation of the state executor, the traditional authority would transfer the land from the family or husband's name to the woman's name (Reddy and Moletsane 2009).

Reddy and Moletsane (2009), affirm that the land transfer process was conducted in one of the developing countries in South Africa when the land in traditional authority areas, was registered under the husband's name alone. After the death of the husband, the woman lost the land to the husband's family. Women challenged the eviction from the land through the legal authority, and the state intervened in favour of the female (Reddy and Moletsane 2009).

However, it would be appropriate if both names of the husband and the wife were reflected in the land application document because the wife would retain full ownership of the land.

This provides women with an opportunity to participate in AF decision-making. Women's active participation in decision-making in AF practices would enhance household food production and welfare.

One of the participants had this to say:

I am a widow staying with my husband, but he died due to natural causes, but we were not officially married but we had kids. After his death, my in-laws claimed the land which was allocated to him and gave it to another family member without my knowledge which I only realized when the new member came to evict us. I went to the traditional authority to lodge a request to retain the land, and have it transferred to my name officially, and the traditional authority transferred the land to my name (5W).

85% of women participants agreed that land transfer in traditional areas was not allowed or permitted; however, where circumstances compelled the traditional authority to exercise that right, they practiced land transfer to avoid family conflicts. Reddy and Moletsane (2009), affirm that traditional authorities, owing to powers vested upon them, are mandated to transfer land previously allocated to the deceased, to the woman beneficiary if the family has a conflict about access to that land.

Women are constrained access to land, land rights, and ownership, and they are limited to the land allocated to their husbands (Buddlender et al. 2011). Land transfer is crucial if women decide to practice AF. There is a notion that when a woman is unmarried, a widow divorced, or separated, in-laws tend to evict them from the land they previously occupied with their husband because they always think that a woman might get married to a new husband.

The participants confirmed that if a woman and the husband signed the land acquisition together, there would not be any problem because both names would appear when the husband dies, but if the husband signed the land acquisition alone, then there would be a problem when the husband dies (Buddlender et al. 2011).

The participants raised a concern that if married women approached traditional authority, they would be assisted, but divorced women were usually evicted by their husbands from the households and were deprived of access to the land (Buddlender et al. 2011). The succession in rural areas is governed by the primogeniture principle, which mandates the eldest son in the family to succeed his father. However, in Umvoti, the traditional authority recognized women to succeed their husbands or fathers in the absence of the eldest son in the family.

One of them said:

Uhhh...after the death of my parents, I inherited this land and assumed the household responsibilities to make decisions within the household; I took care of my younger brother and sisters. I am also responsible for making livestock decisions as part of AF activities (4W).

The exclusion of women from accessing land through succession was premised within the traditional context, which fundamentally denied them the same access to land and land right (Ugo et al. 2011). The participants shared that land was the most incredibly valued resource and the principal basis for rural poor women's income generation. Significant barriers such as exclusion and gender discrimination inhibit poor rural women from accessing the land.

The rule of succession applies to someone's death, depending on an intricate relationship to culture, for local people, where the individual lives, whether the woman is civil or customarily married and which marital possessions administration authorities applied to the civil or customary marriage (Ugo et al. 2011). Thus, women's access to land through succession has advantageous significance for their households, society, and themselves.

More than half (80%) of women participants agreed that they inherited land from their deceased husbands, which was the norm in prominent families where the wife of the deceased, regardless of the marital status, took over the household's responsibilities and decision-making from their husbands, including land rights and control of the land.

Land in traditional authority is not for sale to any person. However, it is reserved for local community development purposes. The South African Cabinet adopted the Comprehensive Rural Development Programme (CRDP) in 2009, which proved to be an expensive and ineffective distraction. The comprehensive Rural Development Programme mandated the municipalities to coordinate the developmental investment in rural areas.

These were means to endeavour consolidation of the capability of traditional authorities to produce more excellent benefits compared to the existing limiting traditional or cultural style of rural development. The concentration to improve women's participation in decision-making in AF practices for food security in the households should be the high priority and remain the highest concentration for women to sustain their family livelihood.

One woman said:

Whoa...eish...as I am a woman who is interested in small-scale farming as part of AF practice, I approached the local traditional authority about the land and explain my situation and my willingness to purchase the land for AF activities. The traditional authority denied me the opportunity to purchase land and I was told that there was no land available for sale (7W).

Women agreed that in rural areas if a person allocated land moved to other parts of the area, the traditional authority took that land back to the traditional authority and allocate it to other families in need of the land. Holomisa (2019), contests that traditional land is under the custodians of traditional authority administration.

The land under traditional authority is registered in the name of traditional authorities, as the land belongs to rural communities and traditional leaders; the title deed is issued with a "single title deed" on the communal land (The African Institute 2016). This implies that rural community should hand over their land ownership to traditional authorities. Individual land ownership is costly for the poor rural community.

It is appropriate that rural women access the land through communal land tenure to enable them to access land and allow them to acquire land rights as individuals or as a group for AF practices (The African Institute 2016). This might not be possible in rural areas, which are still under the traditional authority but might require some transformation from the standard criteria of accuracy in measuring the plots of land to be allocated to an individual or a group.

The participants agreed that they decided that their women discussion groups should purchase land in traditional areas because they cannot be allocated land as women, but they were denied purchasing it. The traditional authority did not allow them to purchase or sell any piece of land. The participants agreed that the traditional authority thought people did not own the land they had a permit to occupy.

Land preparation is used to clear all bush and brushes, rubbish, and unwanted vegetation of different sizes and pithinesses (Liyama, Neufeldt, Dobie, Njenga, Ndegwa, and Jamnadass 2014). This process is significant for women participating in decision-making in AF activities; hence, they are the significant contributors in the AF space and they make decisions to sustain their households' livelihoods.

After a lengthy consultation process with Umvoti women, they reflected that their participation in decision-making in land preparation depended on the size of land allocated to their households. In most cases, women are allocated a tiny piece of land for agricultural purposes. Therefore, their involvement in AF activities is limited to food crop production, and home garden projects.

This is what they said:

Eish...hhee...as married women, we do not own land, and we have no land rights; we normally consult with our husbands about issues of land or any AF activities that might take place in the allocated area. After consultation with our husbands and agreeing on the operation, we request their assistance with land preparation (8W).

The participants confirmed that they participated in land preparation but their participation was limited to the provision of required assistance to their husbands, such as the removal of grass, and branches and providing them with food while preparing the land.

Women's participation was limited to supporting their husbands in land preparation because land preparation was a heavy task that required physically strong people such as men (Aregu, Bishop-Sambrook, Puskur, and Tesema 2010).

Aregu et al. (2010) affirm that labour-intensive tasks are men's responsibility; hence, it facilitates the effective and efficient good practice of AF during the planting season. Women participants confirmed that they also consulted with their husbands regarding land preparation. This consultative process was in line with participatory democracy which occurs after the first informative level, hence, land preparation is vital to them.

There was a notion that women consulted with their husbands as decision-makers at the consultative level (Sundaram 2002). This is where decision-makers and policymakers consult with women's groups without making any decisions. Although, at this stage, husbands might not have any control over women's opinions if they are considered or not considered (Sundaram 2002).

With this participatory level, men as decision-makers would consult women regarding their economic matters, and the decision-makers would be assured to accept and implement women's opinions of providing the support required (Sundaram 2002). Husbands as the decision-makers would consult women in their welfare matters in the AF space.

Even though the final decision lies in the hands of husbands as decision-makers, elite and influential individuals' opinions are considered for endorsement. Women would provide their husbands with food while preparing the land (Sundaram 2002).

The participants agreed that their involvement in land preparation was to assist their husbands with the removal of the debris and small logs from the area being cleared, and this was limited to certain activities, as a group of women involved in home garden-based projects (Chayal et al. 2017). However, most activities were done in consultation with the husbands after decision-makers had consulted them to attend the development meetings.

They said:

We usually assist our husbands with the eradication and clearing of unwanted vegetation such as trees, shrubs, and light logs that have been cleared and provide food to them during the time of land preparation (6W).

The participants agreed that they made decisions on land preparation through their women's discussion groups (Fernandez, Garcia, and Lockwood 2015). They confirmed that their participation in decision-making about land preparation was minimal as males mainly carried out this operation as this was mainly regarded as male-domain activity. Decision-makers invited women to participate in the associative level of participation.

Women confirmed that they embarked on associative participation, which occurred after consultative participation, where women shared their opinions on matters affecting their exclusion from participation in decision-making in AF practices (Fernandez et al. 2015).

The husbands as the decision-makers would interrogate women's problems that prohibited them from participating in decision-making processes in AF practices and evaluate their situation. Women participants confirmed that land preparation was heavy and draining work and required more physical energy amongst AF practices.

Women participants opted to embark on land preparation when their husbands migrated to look for job opportunities as migrant workers. The participants confirmed that their husbands migrated to urban areas for job opportunities and women assumed the decision-making responsibilities of their households.

The participants confirmed that their participation in decision-making in land preparation was crucial as this enabled them to prepare the land the way they wanted it done based on the type of crops to be cultivated. They agreed that land preparation offered them an opportunity to identify the necessary soil conditions.

Although land preparation was a labour-intensive task and physically draining exercise, owing to the high rate of male absenteeism in Umvoti, women decided to participate in land preparation to support the existing male power (Fernandez et al. 2015).

Site preparation is an operational method that is extensively employed to expedite the establishment of a desirable AF practice (Fernandez et al. 2015). Site preparation activity succeeds land preparation, which is the removal or reduction of competing vegetation and eradication of undesirable trees, logs, and debris in a demarcated area.

Site preparation prepares actual soil to stimulate plant growth and the required vegetable crop or tree (Fernandez et al. 2015). Site preparation encompasses eradicating all competing vegetation, which can be carried out manually, chemically, or mechanically. Women of Umvoti embarked on on-site preparation to expedite establishing a required food crop production and cash crops.

Participants said this:

Ohh...yes, we participate in site preparation as part of AF activities so that we can clean the land by eradicating unwanted vegetation and prepare it to enhance crop production by changing soil properties and reducing vegetation competition (5W).

Women are responsible for the complex chores of households and pursue various livelihood strategies such as food crop production, livestock, domestic tasks, and marketing (Pal and Haldar 2016). The participants confirmed that they decided as a women's group on the suitable site preparation to increase their crop production to accelerate economic growth and enhance their household livelihoods.

Site preparation enables the soil to promote growth and required crop survival. The main objective of the site preparation is to provide an appropriate area for planting and creating a new area for different crops (Pal and Haldar 2016).

The participants confirmed that they decided on on-site preparation based on the crops to be cultivated and considering the seasons and climatic conditions.

The literature reflects that women accessed their plots for food crop production cultivation. Further, they sell AF products, particularly food crops as surplus to the local market and had their interchange undertakings. Studies from West Africa revealed that women commonly have insufficient privileges to lead in community decision-making that fundamentally transforms strategic decisions for improvement (Pal and Haldar 2016).

The participants confirmed their decision on suitable site preparation methods. They confirmed that they shared knowledge and experiential learning about site preparation. They further confirmed that even though they operated in their different plots, they still met every quarter to discuss matters about AF practices.

Women usually provide the household income and spend it on household consumption. It is common for men to request money from women to purchase farm inputs (Colfer et al. 2015b). Thus, these inputs are considered men's responsibility, as they are frequently productive AF undertakings.

Women participants confirmed that their household responsibilities were based on social undertakings, encompassing capacity building on domestic tasks, and they would first engage their husbands if essential decision-making were required (Colfer et al. 2015a). Women would play an associate role, and husbands remained the leading decision-makers.

Women confirmed that with their knowledge and experience in AF practices, they believed that the most appropriate period to carry out site preparation was between June and September, just before the beginning of the rainy season. Further, they confirmed that site preparation before the first rains enabled the soil to absorb water and improve water infiltration to the soil before planting season.

Colfer et al. (2015a), affirm that women's vast knowledge and experience enabled them to understand climatic conditions and decided the appropriate method for site preparation. Women participants contested that the knowledge and experience enabled them to decide on the types of food crops produced at the specific time of the year.

Although Smith (2015) affirms that influence and intervention are discussed differently within these groups, they signify local and global spaces. The participants confirmed that women's groups afforded additional vigorous and authorizing involvement. At the same time, producers' cooperatives offered institutional construction amongst moral trade controlling preparations and smallholder livelihoods.

Women participants acknowledged that the extent to which women's groups should be incorporated into moral trade, is not forthright, and the possible compromises (negative and positive) for women should be considered. Smith (2015) affirms that women's groups advantage in their participants because they are independent, traditionally suitable, and determined from the ground.

The participants contest that they entrench into economic and environmental production and reproduction within their public and food setups. Smith (2015) asserts that women's groups could be connected for the advantage of ethically trading and women farmers to necessitate further investigation.

Pal (2014), affirms that diverse thoughtful associations require advanced support for women farmers in reacting to the necessities of ethical locating reviews as well as providing an interplanetary for women to voice their opinions and influence decisions while remaining to pursue diverse economic strategies that may or may not include participation in producer cooperatives.

Women's decision-making in the AF space requires various interventions ranging from site preparation, ploughing, planting, weeding, and harvesting the AF products (Enete and Amusa 2010). These interventions determine household needs based on the type of commodity, land structure, and the growing season.

Women may decide on ploughing depending on the type of crop to be planted. This determines the turning of the soil into the required soil depth level before planting the anticipated crop (Enete and Amusa 2010).

The participants were requested to testify if they participated in ploughing operations as part of AF practices and how they made decisions related to ploughing operations, and they responded as follows:

Yeah.... we have started with a manual ploughing process to get ready for the planting season. It is our culture to plough the area and leaves it to rest for about two few weeks and come back to proceed with the planting operation depending on the type of crops and trees to be planted (11W).

Women participants were requested to testify if they participated in ploughing operations as part of AF practices and how they made decisions related to ploughing operations (Enete and Amusa 2010).

It is critical to determine how women engage in decision-making in household AF practices (Enete and Amusa 2010). Women's participation capabilities and lack of access to resources influence their decision-making processes. However, there are assumptions that women's involvement in decision-making in AF practices is poorly understood as this differs from region to region.

There are various ways of carrying out ploughing operations, which are either manually or mechanically (Enete and Amusa 2010). Normally, husbands as household decision-makers offer different levels of women's participation in ploughing operations. Women may be heard but excluded from decision-making on the methods to be used, or husbands ensure that women's opinions are heeded by the elites or by those who are influential by their political status (DFID 2010).

Women's ability to have their voices heard is inhibited by poverty, discrimination, lack of their rights to consciousness, lack of government interventions and inadequate power at a low level (DFID 2010). This concept reflects participants' views of the costs and profits of their participating significance.

Authority reflects those women and marginalized groups' exclusion in decision-making limits their participation in different operations such as ploughing. Enete and Amusa (2010), contest that this was counter-productive because there was bound to be conflict. After all, women as fundamental players responsible for household decision-making were excluded from the decision-making process.

Although previous efforts estimated that women's role in AF practices tended to evaluate their labour contributions, very little information has been available concerning their role in decision-making (Enete and Amusa 2010). Ploughing is regarded as a heavy and physically draining exercise, which requires it to be carried by men, but women decided to carry out ploughing manually.

Women confirmed that by using their knowledge and experience in manual land work, ploughing produces good results instead of ploughing mechanically, which poses a danger to soil compaction. The participants confirmed that because of the size of their plots, they used hand hoes to plough their lands. In the more prominent families who still had cattle and their husbands were available, they used oxen to plough their lands. Erkossa (2005) affirms that the ploughing of land in preparation for planting depends on the type of crops to be cultivated, the depth of the root crops, and the nature of soil structure.

The participants agreed to assist their husbands when ploughing the land using donkeys, and they affirmed that they preferred to use hand hoes for ploughing because of the sizes of their plots. Umvoti women participants preferred to carry out land ploughing manually because of the rural nature of their areas, which could not accommodate mechanical means.

The participants claimed that they were comfortable with their traditional methods of land ploughing because it provided them with adequate time to remove all weeds that posed competition to the cultivated crops. The majority (90%) of women agreed that they met as a women's group to decide their methods to plough their lands as part of their responsibility.

They confirmed that, although they discussed administrative matters with decision-makers, they had no choice, but to select the best option of ploughing method from the pull of decisions provided by decision-makers for implementation purposes.

This is what they said:

Wow...ploughing mechanically can be a good and perfect idea because the use of a tractor ploughs deeper and reach the highest depth of soil, which is good for water absorption purposes (6W).

Rural women play a vital role in practicing hand hoeing ploughing in AF practice (Team and Doss 2011; Enete and Amusa (2010). Although hand hoeing is labour-intensive and time-consuming, women pursue this practice as a group assisting one another to accomplish their scheduled tasks. The household size and the level of women's contributions play an essential role in their decision-making.

The participants confirmed that those women with large land areas contributed extensively to household decision-making.

Through their extensive participation in AF practices and decision-making, they realized that ploughing contributed to the activation of soil nutrients and the facilitation of soil structure to absorb soil nutrients (Team and Doss 2011).

Women affirmed that they preferred ploughing using mechanical means in the new sites because tractors penetrated the soil deeper and it improved drainage. Women further, confirmed that using the tractor was fast and not labour-intensive, but the problem was the soil compaction (Team and Doss 2011).

Mechanical ploughing is important to women because it enables the breaking down and loosening of the soil to facilitate the proper mixing with the manure to be easily absorbed by the soil and release the nutrients to plant roots (Team and Doss 2011).

Harrowing is the process of breaking the soil further down and crushing it to the surface to prepare for the planting operation (Olague 2017). Harrowing can also be carried out mechanically using the tractor or manually using the home garden rakes, donkeys, or oxen. The participants contested that harrowing was the most commonly used operation for preparing seedbeds and finishing.

They said:

Eyyy...harrowing is very crucial in AF practices, hence, it eliminates excessive weeds, hence we practice harrowing manually to prepare our plots for planting after ploughing because we must create a brittle level for planting (12W).

The participants stated that a harrowing operation enabled them to break the soil sods into the finest particles and eradicated weeds or crops on top of the soil surface.

Harrowing created a more homogenous topsoil structure and facilitated the development of new roots after germination (Falnovic 2019).

This was observed in the study conducted in rural areas of India, which established that women were the maximum significant productive labour force in the economy of India (Falnovic 2019). The study revealed that AF activities in India provide approximately 18% of GDP and are primarily by women's activities. Predominantly 18% of women are actively engaged in AF sectors such as land preparation and animal husbandry.

The study further revealed that women outnumber men and entirely rely upon women's labour force (Falnovic 2019). Practically the entire rural women in India are reflected as women farmers in the sense that they are all traditionally involved in AF activities, such as labour force and animal husbandry. The mainstream AF workforce in India encompasses women as decision-makers in diverse AF undertakings, which requires to be appropriately taken care of.

The participants confirmed that they embarked on harrowing to enhance soil aeration and stimulate water infiltration. Women confirmed that practicing harrowing after ploughing yielded good results in crop growth. Harrowing is the right move to eradicate all dead thatch grass and vegetation and keep any available molehills levelled. This is common in the Umvoti area; hence, Umvoti is highly infested with molehills and other dead thatch grass or vegetation.

Soil levelling is the process of elevating the soil and confirming that the soil depths released are uniform over the field. This operation protects fertile topsoil against erosion by strong winds or heavy rainwater.

Soil levelling enabled women farmers to maintain consistent water distribution during irrigation and prevent moisture loss.

This is what they said:

Ooh!!! wow!!! soil levelling is the most preferred operation because that is where I level the soil for planting purposes. This is normal, where I break up the soil to cultivate various food crops (11W).

Soil levelling protects the top soils against strong winds or heavy rainwater erosion, and this has some positive contributions to water circulation consistency (Nagpal 2016). This operation enables women farmers to maintain water and consistent distribution in the fields during irrigation.

This operation reduces soil moisture loss during water evaporation in the root zone. Soil levelling enables women to elevate the soil and confirms the soil depths to release its uniformity over the field (Nagpal 2016; FAO 2016).

The participants acknowledged that through their knowledge and experience, they had learned how to carry out soil levelling on their small household plots using their hand hoes. They acknowledged that their participation in decision-making as a women's group had been helpful in AF practice.

(FAO 2016) affirms that soil levelling has some positive contribution to maintaining the uniformity of water flow and soil nutrients; hence, soil nutrients and water drainage typically follow the soil slope.

The participants confirmed that their decision about soil levelling influenced them to plant their vegetable crops efficiently and provided adequate watering without excessive water, and there was an opinion that soil levelling improves soil structure to allow sufficient aeration and water infiltration.

Soil levelling encouraged women farmers to plant food crops particularly, vegetable crops efficiently and provided adequate watering without excessive water, and they believed that soil levelling improved soil structure to allow sufficient aeration and water infiltration (FAO 2016).

Women participants confirmed that they embarked on soil levelling to complete soil preparation. They further agreed that they avoided heavy earth movement to maintain the natural soil structure, thus upholding better developing crop root conditions and lowering the levelling costs (FAO 2016).

Normally, planting is women's responsibility, hence, their participation in AF is mainly through home base garden projects, where they produce food crops as a women's group and use this platform for decision-making (Schiele 2005). However, they are constantly deprived of equivalent access to land and land rights under male-dominated structures, but they use the plots allocated to them for AF practice purposes.

The participants considered this deprivation as cultural oppression, one of the African women's persistent challenges (Schiele 2005).

However, very minimum has been done to link political and economic oppression to cultural oppression and to overview cultural oppression as the background in explanation of African women's high rate of vulnerability.

Cultural oppression contributes to women's lack of involvement in decision-making in AF practices (Schiele 2005). Failure to involve women in decision-making is perceived to be the main contributing factor prohibiting them from adopting AF technologies.

This is what they had to say:

Mmm...it is crucial that we made decisions as women using our home garden project structures to decide on the types of crops that we can plant, even if we plant them in our small plots, but to avoid the duplication of planting the same crops, we allocate different types of crops to different members within the group, so that when we sell the surpluses we can buy from each other within the group and have enough for our domestic consumption (16W).

One of them said:

Although I may not have adequate knowledge about tree planting, I have planted many fruit trees in my plot to produce many fruits for food security and sell them to local people to generate income (9W).

The majority (80%) of women participants agreed that they usually meet and decide on the types of crops they will plant in their plots to sell and buy from each other when they have AF product surpluses. Women participants agreed that they divided the crops among the groups, but mostly they all planted food crops such as vegetable crops, root and tuber crops, cereal and pulse, and fruit trees.

Bhattacharyya and Vauqueline (2013) affirm that a considerable quantity of literature worldwide has constituted that women participate in AF activities aboard other domestic tasks. However, studies from developed countries such as Bangladesh revealed that women contribute approximately 30.7 per cent to the AF labour force, while in developing countries about 43.6 per cent (Bhattacharyya et al. 2011).

Women are recognized as cost-effective as men are, but their performance is minimal owing to the lack of access to similar inputs, employment and resources such as land and water (Bhattacharyya and Vauqueline 2013). Women play a critical role within the smallholder system and are responsible for food crop production (FAO 2010; Bhattacharyya et al. 2011).

Women confirmed that their decisions were influenced by the fact that most of the activities, which involved livestock in the household depended on them because livestock was often reared in the household in the absence of their husbands who were migrant labours, some were never married, and others were widows. Reddy (2019), affirms that women's tasks in livestock matters are more on the production of meat, eggs, and marketing of small livestock for domestic consumption purposes.

One of them said:

Hmm...eeehhh...I am a widow, and my husband was involved in a woodlot established to support his family through the income which was generated from these woodlots. After his death, the management of these woodlots remained my responsibility of which I manage them for pole, timber and bark production. I sell the timber to the Forestry Company and sell bark to the processing factory for tannin extraction, I also sell poles to local people for building, fencing and burial. The branches from the felled trees are used by the community for firewood to generate income for my family's livelihood (15W).

The other one said:

Hmm...eeehhh...I have wattle woodlots in my area, which I managed for pole, timber and bark production. I sell this timber to NCT Forestry Company and bark to Hermansburg for tannin extraction, but I sell poles to local people, which they use for building, fencing and for burial. I sell the branches of the felled timber to the community as firewood (9W).

2 0% of women participants agreed that they made decisions as a women's group participating in AF practices to participate in the establishment and management of woodlots (Kiptot and Franzel 2012). Women made decisions concerning their participation in woodlot establishment and management had a tremendous positive impact in terms of fuelwood and building material.

The participants confirmed that they considered their proximity to the timber processing facilities, reducing transport costs, and embarking on bark extraction and timber processing production. Women acknowledged that woodlots establishment and management was a male domain (Kiptot and Franzel 2012).

However, most Umvoti women are widows, unmarried, separated, and some have husbands working away from home, and women assume their household heads. They embark on woodlot development programmes as part of AF practices. Kiptot and Franzel (2012), affirm that women's participation in decision-making in woodlot establishment and management has yielded the best results in rural areas regarding income generation and employment opportunities.

The participants indicated that they had realized a significant shortage of fuelwood and building material in Umvoti, caused by massive deforestation and degradation of land escalated by large livestock and human population. They made collective decisions to participate in woodlot development, which was influenced by dominating commercial farming with white commercial farmers and private forestry companies.

These farmers and companies employ local communities in the form of enhanced infrastructural enterprises as they develop schools and roads in their areas of jurisdiction. Even though woodlots are cash crops that are male domain because of their commercial value.

Table 5.8: Table showing the types of crops, names of crops, the percentages of the extent to which women participants decided to plant in their plots in Umvoti

Type of crop	Name of crop	Percentage (%)	Usage
Vegetables	Cabbage, spinach, Potato Hot pepper	90.0%	Domestic consumption and marketing
Root and tubers crops	Sweet potato Amadumbe	98.8%	Domestic consumption and marketing.
Cereal and pulse	Maize, Beans	100%	Domestic consumption and marketing
Fruit trees	Banana, Oranges Mango, Avocado	68.0%	Domestic consumption and marketing
Livestock	Poultry, Goats Donkeys, Cattle	98,8%	Domestic consumption, ploughing, transportation, and marketing.
Cash crop	Wattle, Gum	20.0%	Women are responsible for fuelwood, building material, marketing, bark and pole production, timber cultural activities, and woodlots.

Source: Umvoti local municipality 2021

A sustainable AF project requires a well-equipped and managed nursery to produce excellent and healthy seedlings for food crop production and types of cash for food security purposes. A nursery is a demarcated protected site reserved for the propagation of transplants.

Seeds are propagated and grown to the desirable usable sizes before being transplanted in the field. However, the provision of healthy and good seedlings for different crop types could enhance their participation in AF practices. Women participants were asked if they knew what a nursery was and used for.

This is what they had to say:

I assume that a nursery is where plant and crop seedlings are propagated and kept before planting in the field, however, it is impossible for us in this area to establish a nursery due to the lack of knowledge and financial support (4W).

The participants confirmed that decisions on matters about nurseries had been a great concern to them because purchasing seedlings from commercial nurseries were very expensive. The participants confirmed that nurseries produced excellent quality seedlings, and they had seen good seedlings produced from commercial nurseries.

Women participants raised a very serious issue that they would not buy seedlings from the well-established/ commercial nurseries because they required money, and transportation, which they did not have as poor rural women.

Normally, commercial nurseries are located in urban areas, and they are expensive. Although women farmers have tried several times to establish their community nurseries, they were ignored by policy-makers and decision-makers. This also has an impact on their lack of participation in AF decision-making.

Their active participation in AF decision-making is prohibited by the absence of nurseries, and the distance and the cost of transport to purchase seedlings from commercial nurseries. The participants alluded that were unable to purchase seed crops from commercial nurseries because they became dry and died before being planted owing to poor storage while they were still waiting to be planted.

A nursery serves as the source of seedlings for AF practices, it is a significant resource for women to participate in decision-making in the AF space about food crop production (Kumar and Tewari 2018).

One participant said:

Because of the absence and costs of seedlings from commercial nurseries and the transport costs, I prefer to prepare seedbeds in my plot to germinate vegetable seedlings because there is no community or women's group nursery in this area (14W).

Women agreed that they did not know the nursery practice because they lacked knowledge of AF which should be provided by government agents through extension service. To embark on a nursery establishment requires financial support, which is lacking in AF practices. Hence, it is costly to run a nursery and labour-intensive.

Seedlings generally planted in the field are germinated from the local nurseries, propagated from individual, or group agricultural projects, or collected from mother trees. Very minimum seedlings are purchased from commercial nurseries. Nonetheless, some women who might be able to purchase from commercial nurseries, contribute money to purchase seedlings.

This is what they said:

Although we are financially constrained, we have decided that those who can collect and contribute some money to purchase seedlings from commercial nurseries can purchase them (12W).

The participants confirmed that women lacked knowledge of producing high-quality seedlings because of the absence of extension services. 68% of women agreed that they collected and contributed money to purchase improved seedlings from commercial nurseries.

However, this could change women's farming lifestyle from traditional self-sown seeds to improved tree and crop seedlings. Women can guarantee high-quality crop production and better seedlings if they purchase seedlings from commercial nurseries. Almekinders and Louwaars (2002), affirm that women cannot purchase high-quality seedlings owing to their lack of financial resources.

However, the funds they contributed included transport and delivery costs. Through experiential learning, the participants agreed that they had recognized the significance of using commercial seedlings because they were guaranteed survival and resistant to pests, disease, and drought.

The participants, nevertheless, reflected that the use of high-quality seedlings for AF practice enhances their AF product to generate more income. Sharma, Rao, and Sharma (2013) assert that the involvement of women in decision-making in matters of food crop production and cash crops is essential for income-generating and food security for poor rural people.

This is what they said:

Eish.... although we are participating in our home base garden projects as a women's group focusing on food crop production for our domestic consumption to sustain our household's livelihoods, we also participate in the establishment and management of woodlots as cash crops (15W).

Cash crops such as woodlots establishment and management are mainly men's domain, but in the absence of husbands as household heads, women play the role of their husbands as household heads, but they are still ignored and neglected in decision-making.

The participants confirmed that Phez'ukomkhono Cooperative was established as a platform where all woodlots growers would participate in decision-making, but women were excluded from decision-making. 20% of women participants confirmed their participation in woodlots establishment, management, and harvesting cash crops, but excluded from decision-making.

The establishment of woodlots requires tree seedlings that are strong and healthy to sustain intense weather, drought, pests, and diseases. Umvoti climate is characterized by strong winds, heavy storms, and hailstorms. Therefore, women participants agreed that through the Phez'ukomkhono Cooperative, they could make decisions to purchase high-quality seedlings from commercial nurseries.

Seedlings purchased from commercial nurseries grow fast and produce good timber than the seed collected locally and germinated using traditional methods (Jagger and Pender 2005). The participants in their women's group meetings decided to spend more income on top of their domestic chores, planting fruit trees in their gardens as part of food security.

Abebe et al. (2017), affirm that women spend extra hours of labour in subsistence crop production, including cash crops, especially where there is a high degree of male migration to urban areas for job opportunities.

Fertilizer application is the process of applying fertilizer in the field where AF is practiced (Risse 2017). However, two types of fertilizers are used in AF practices. These are organic and inorganic fertilizers, where organic fertilizers are locally collected and include kraal manure, chicken/ poultry dropping and local compost. Organic fertilizer is scientifically manufactured with chemicals.

In Umvoti municipality, participants preferred to use organic fertilizer, which was kraal and chicken manure, because of its accessibility and availability.

This confirms that poultry and kraal manure contain nutrients that support crop production and physically and chemically enhanced soil properties.

Organic manure application improves the absorption of soil nutrients by tree roots and vegetable crops (Risse 2017). The application of organic manure was women's responsibility, and they were applying it before planting using the broadcasting method, and after planting using localized and half-circle methods to their vegetables, fruit trees, and cash crops.

The application of manure through the broadcasting method is to spread the manure throughout the soil surface of the field without mixing manure with the soil. Women farmers practice broadcasting manure application before the first rains and ploughing their plots to maintain soil fertility.

Women were collecting and distributing kraal manure spreading it throughout the field, where they were ploughing just before the first rains and spreading it throughout the field by hand. Women in the study area used different manure such as chicken waste, kraal manure from cattle, chicken manure, and goat manure.

One of the participants said:

Yeah...Eyy...it is my responsibility as a woman to maintain my household plot soil fertility through manure application. I collect kraal manure from the livestock and spread it in the field households. In most cases, I use both chicken waste and kraal manure because it is always readily available in the chicken kraal or cattle kraal manure(16W).

The majority (85%) of participants agreed that they practiced the broadcasting method because it afforded roots to absorb sufficient manure for the food crops and trees. They confirmed that the broadcasting method was preferred for its extreme yields and better distribution of labour by permitting the original manure application to be carried out before planting (Nkeme, Ibok, Umok, and Umoh 2014).

The participants affirm that they prefer to broadcast manure during soil preparation to allow sufficient water absorption by the soils and water infiltration. This manure application method suits them well because of their small plots, while the use of other manure application methods is high and costly. However, the costs of using broadcasting methods were reasonable. The participants contended that they typically broadcast manure before planting because the manure broadcasting application was suitable for them. After all, the broadcasting method was less labour-intensive (Nkeme et al. 2014).

Localized placement manure application is the process of applying manure in the form of a band, hole, or half-circle just next to a row of seeds, seedlings, or trees. Women participants (58%) in Umvoti regarded this method as the best method for women who lacked access to relevant resources such as Umvoti rural poor women.

One of them said:

I am interested in food crop production especially vegetables such as spinach, tomatoes, cabbage, potatoes, cabbage, lettuce, onions and maize meal because this is what we are eating on daily bases and also sell to others if they need it. Therefore, the use of localized manure application is good for vegetable crops because of their minimum root systems (10W).

Aslam (2016) affirms that it is crucial to maintain soil fertility and soil nutrients through diverse sources such as organic fertilizer and inorganic fertilizer, to enable women farmers to produce continuously healthy and nutritious vegetable crops (Aslam 2016). The participants, mainly from FHHs, acknowledged using organic fertilizers after planting to allow sufficient time for water absorption and water infiltration. All participants in the study area agreed that manure was their responsibility.

The participants agreed that they used localized manure application for their food crop production and fruit tree. Once food crops are harvested, soil nutrients must be replaced (Aslam 2016). The participants confirmed that manure application, mainly localized method, should be encouraged to apply organic fertilizers, specifically kraal manure, to their soils.

The half-circle manure application method is carried out in a semi-circle manner around the plant, seed, or seedling. This method is suggested for vegetable crops such as tomatoes, pepper, and cabbage transplants because of their broader row spacing.

Kraal manure is described as an enclosure in the household where livestock such as cattle, goats, and donkeys are kept overnight to protect them against theft and provide shelter (Van Averbeke and Yoganathan 2013). Kraal manure was the most women's preferred manure because mostly in rural areas kraal manure is readily available in most households. The dung and livestock urine accrue on the kraal floor to create manure cover. This organic matter comprises the animal's plant remains digested in the kraal.

One of the women had this to say:

Eish...it is our culture that we apply manure from our livestock such as cattle, goats and chicken waste. This has worked very well for us we realised that inorganic fertilizer is luxurious and may have negative impacts on our environment, further, before the application of inorganic fertilizer, we are required to do very expensive soil testing and required special knowledge that we do not have (5W).

The participants confirmed that they preferred organic manure because they could easily use their hands to spread the manure throughout the field before ploughing (Nkeme et al. 2014). Organic manure is spread throughout the field before ploughing or is mixed with the soil during ploughing.

The participants confirmed that it was necessary to apply organic manure before the first rains. This would enable the soil to absorb manure to increase soil nutrients. The participants maintained that inorganic fertilizer was costly and they lacked financial resources (Nkeme et al. 2014).

The use of chicken manure is every day and the most preferred manure because of its affordability and its availability (Nkeme et al. 2014). 90% of participants agreed that manure application was their responsibility.

They confirmed that they applied kraal manure, chicken waste, and goats' droppings in their vegetable crops. Vegetable crops are soft and palatable shoots, leaves, fruits, and plant roots.

Organic fertilizers have great positive potential to offer trees and crops with soil nutrients required to produce healthy and robust products. Miller (2018) affirms that the use of inorganic fertilizer requires soil testing, which might be difficult for women farmers with the assistance of agricultural officials.

The participants confirmed that the use of inorganic fertilizer was costly, and required vast knowledge of their application, starting from soil testing (Miller 2018). The participants agreed that if they had adequate knowledge of inorganic fertilizers and had funds to purchase them, they would have used them.

The participants agreed that soil testing enabled them to understand the soil type, the content of soil nutrients, and the quantity of inorganic fertilizer they could apply to their soils. Organic fertilizers generate an increasingly energetic environment, and inorganic fertilizers offer quick nutrition (Miller 2018). Organic fertilizer mainly, kraal manure, chicken waste, goats, and donkeys, encompasses diverse components and variously provides these nutrients.

Comparably, determining which the best for your plants is, depends significantly on the requirement of the individual plants and preferences regarding the costs and environmental impact.

One participant had this to say:

I am very interested in AF practices and I wish I could get more land and necessary information about AF practices. I use organic fertilizer because it is readily available; we have chickens, goats, and cattle as a source of organic manure, and I do not require any funds to purchase inorganic fertilizer (3W).

The participants have a minimal form of education or have no form of education, which generally reflects women's lack of education (Edesi, Jarvan, Noormets, Lauringson, Adamson and Akk 2012). This results in women farmers lacking knowledge of the significance of the types of fertilizers and their applications.

Participants reflected that they had realized that vegetable crops were eaten in minor amounts as a side plate with staple food. However, because of the lack of knowledge in AF, they still experienced insufficient access to inorganic fertilizer resources, which contributed to diverse aspects such as the low production of vegetable price, lack of knowledge on poverty, adverse government approach, poor organizational structures and meaningful influence of the use of chicken waste (Edesi et al. 2012).

Weeding is an essential process of removing weeds or unwanted vegetation around the planted crops to minimize competition between the planted crops and unwanted vegetation (Sharma and Sharma 2012). This process can be carried out manually, mechanically, or chemically. Umvoti women were practicing weeding manually using a hand hoe, a steel-shaped tool fitted with the long wooden handle used for hoeing.

A hand hoe is a versatile agricultural hand tool used to profile soil and remove all unwanted or unplanted vegetation categorized as weeds.

This process is also used to clear soil and plant and harvest root crops. In most cases, this tool is designed to shape the soil. This includes making heaps of soil around the plant and excavating thin grooves and narrow ditches for seed planting.

One woman said:

Mostly, I prefer hand hoeing for some AF operations particularly land preparation, ploughing and weeding because we work collectively as a group in our wards. This enables us to complete the task we set for ourselves within a very short space of time (9W).

The participants (80%) agreed that they used a hand hoe to loosen the soil and remove weeds around the planted crops. They indicated that sometimes tool use depended on the vegetation density and the type of crops. They stated that hand pulling was sometimes more appropriate for vegetables than hand hoeing; although it was labour-intensive and time-consuming, it is effective and efficient.

Women participants confirmed that they preferred to use hand hoes because of dense vegetation and time constraints. Hence, they used hand hoes to till the soil, remove the weeds, and dig the soil in preparation for seed planting. Abbas and Kremer (2018), affirm that hand hoeing should be done when the weed seedlings are still tiny.

This would enable women to eradicate and destroy weeds just before they could flower and produce seeds, which would spread to the soil surface. Shallow hand hoeing is recommended because it decreases crop root damage and reduces crop root damage.

The participants indicated that weed was a problem, especially after manuring and the first rains (Abbas and Kremer 2018).

The participants confirmed that sometimes they eradicated weed manually, using different tools such as cane knives, bush knives, and hoes. The participants reflected that the use of chemical methods was very expensive and they lacked the financial resources to purchase chemicals.

The women indicated that chemicals were dangerous if women were not adequately trained to use chemicals efficiently (Abbas and Kremer 2018). Women participants were of the view that eradication of weeds in the planted areas was their responsibility.

Women's lack of knowledge in chemical weeding operations, and the high costs of weeding chemicals, could result in women's crop destruction (Abbas and Kremer 2018). The participants indicated that they carried out comprehensive weed eradication during the land and site preparation before planting season.

One of them had to say:

I practice weeding manually to remove unplanted vegetation. I normally carry out this operation before it grows high and suppresses my crops. I sometimes use my hands to pull out other small weeds instead of using hand hoes, especially where vegetation is mild and the hoe might damage the crops' roots and around the trees or along the vegetable crops (13W).

Weeding after planting is quite significant to promote crop growth, although some recognize weeding as a time-consuming exercise.

Umvoti women conducted weeding using hand hoes, sickles or eradicating weed by pulling it by hands. Kaur (2016) affirms that weed is any plant or vegetation that obstructs the objectives of agriculture or forestry. Women agreed that weeding was a significant measure to control unlawful vegetation, which competes with planted crops.

Eradicating unwanted vegetation is valuable; these plants compete with the crop in terms of space, nutrients, and water. Weeding assists in keeping the soil to allow water infiltration and ease the development of the cultivated plant's roots. The participants further agreed that they made a collective decision regarding the weeding of their AF crop.

The participants confirmed that they spent approximately 60% of their time in AF practices on the initial weeding phase as part of the cleaning operation. It is estimated that a large quantity of yield losses varies from 25% to an entire crop catastrophe (Le Bourgeois and Marnotte 2002).

These anticipated yield losses depend on various aspects such as weed density, availability of enhanced weed control knowledge, weed cost control, and weed management level practiced by women farmers.

Women farmers' mainstream recognized weeding as the key restriction factor in their AF practices (Le Bourgeois and Marnotte 2002). The participants confirmed weeding manually through hand hoeing or hand pulling during the first 30 days after sowing or planting.

The participants emphasized the importance of thinning operations to reduce plant competition by removing excessive plants.

They alluded that second hoeing should be carried out between 50 and 60 days after sowing or planting, subject to the appearance of weed re-growth (Le Bourgeois and Marnotte 2002).

The watering of seedlings and crops in the nursery and the field after planting was mainly women's responsibility. Women practiced watering during planting in the field and after planting during the winter season. Russell (2019) attests that tree seedlings and vegetable crops require adequate watering to avoid drying out because of water shortages.

The availability of an organized, clean water supply is significant to offer healthy plant growth. Watering requires a good water supply, labour, tools, and equipment for watering. Watering plays a significant role in seedlings and crops after planting (Russell 2019).

It is perceived that the invariant clean water supply is vital to sustaining healthy plant growth and for the benefit of rural society (Russell 2019). The abstraction of water required by seedlings depends on various factors such as the age and height of the seedlings, sunlight, and soil type. The process of watering seedlings begins in the morning and stops when the sun heats up.

The availability of a clean water supply is significant to offer healthy plant growth as watering requires a good water supply, labour, tools, and equipment for watering. Water is a scarce resource in South Africa, particularly in rural areas like Umvoti. Participants claimed that:

Although the shortage of water supply compels us to practice watering once a day, particularly during the winter season, the newly planted seedlings grow fast and stabilize well in the soil (9W).

It is a common phenomenon that seedlings and vegetable crops require sufficient water to grow (Russell 2019). Although nursery plants comprise approximately 90% of water, watering is still a necessity.

Women participants agreed that they decided their women's group to commence watering in the very early hours of the morning in their plots to allow time for other AF activities. However, during the study, Umvoti women expressed their concern about the serious water supply challenges they are experiencing.

From the South African perspective, particularly in rural areas such as the Umvoti Lake, Merthley remains the primary water source, supporting many communities. Thus, this has some negative impacts on Umvoti's economic growth destabilization.

One of them had to say:

We are experiencing water shortages in our area, and the Municipality cannot afford to supply us with water, especially for our gardens. We only have water for our domestic use, and even the water they supply us with is not enough because they only supply the whole area once a week (5W).

Women participants expressed their great concern about the water supply challenges they are experiencing in Umvoti. Women participants attest that Lake Merthley is the primary water source, supported by a minimum number of boreholes with limited capacity, contributing to Umvoti economic growth's possible destabilization. Women participants were asked to elaborate on their involvement in watering and how they decided on the frequency of their watering and watering methods.

The participants agreed that they decided to use watering cans and buckets during their home base garden meeting when watering their seedbeds and seedlings to save water. Although watering cans and buckets were time-consuming and labour-intensive, women were not in a position to install the central watering system where they could connect water pipes and irrigating systems because of their financial constraints. Women must consider suitable plant watering methods, which should consider the number of plants or seedlings grown (Robert 2017).

The participants confirmed that they would lobby women employed in commercial nurseries during their women's group discussions because they might have better knowledge of diverse aspects of nursery practice. Phillips (2013) contests that women generate more insight and a better understanding of trees and vegetables grown in the nursery because of the diverse knowledge and experience they have in nursery practice.

The participants confirmed that they made decisions based on their knowledge of labour costs, expenditures, water preservation and water-use competence. Women attested that if they had an opportunity to establish their community nursery, they would have used their nursery management knowledge to generate more income.

Women confirmed that the use of watering cans during the watering process benefited plants so that each plant received special attention from an individual woman who could follow up on any possible complications that the plant might experience, such as diseases and pests.

Farming in most rural areas has been classified as male dominating activity. However, women are playing a vital role in AF practices where they contribute a significant percentage to food production coupled with their domestic work. Similar studies were reflected on American AF practices. It was estimated that women provide about 80% of labour in crop production in African countries.

The classification by Boserup (1970) was centred on the assumption that in poor rural areas, AF activities such as land ploughing are usually male domains where women play a limited role because of their lack of access to land and land right. Women nevertheless contribute a large percentage of labour in AF practices from site preparation to the marketing of AF products.

The participant said:

Eish.... participation in AF is my daily bread, hence, there is no single day that goes by without me carrying out AF activities to sustain my household's livelihoods. And my engagement in AF ranges from land preparation to the marketing of the AF product (15W).

80% of participants agreed that they made decisions through their women groups on how to contribute effectively to AF practices to enhance food crop production. Participants confirmed that labour intensity and extra time spent in AF practices contributed to the growth of economic acceleration.

Women spend extra hours carrying out AF practices, and their time in AF activities is more than the time they spend in their households for their regular domestic chores (Dedefo, Derero, Tesfaye and Muriuki 2017). Their involvement in AF activities relies on the manual labour of which women constitute a large amount of AF labour.

In rural areas, AF practices create job opportunities for local poor communities, particularly disadvantaged women and out-of-school youth (Dedefo et al. 2017). Job opportunity is always at the top of women's agenda during their women's group discussions.

This is where women usually discuss issues about their training and youth on seed collection, identification of a variety of plants, and their use in AF practices.

One of them said:

Eish...I participate in various AF activities but focus more on food crop production, hence, that is where I spend much of my time doing planting, watering, weeding harvesting and post-harvesting (3W).

The majority (80%) of participants, through their women's discussion groups, agreed that they made decisions that they had to spend much of their time on food crops production such as vegetables, cereals, and pulse, which were perceived to be the staple crops significant for household food security.

Food crop production such as cereals and pulses (beans and maize) attract more women's attention to participate actively in AF, because of their protein content, especially in rural areas where meat is a challenge (CIALCA 2011). Women confirmed that their participation in AF practices was significant, particularly in the poor rural community, hence, many women farmers frequently provided labour and a significant quantity of AF activities.

The failure to recognize their participation in decision-making in AF activities has a tremendous potential contributing factor to the lack of involvement in AF activities and food insecurity.

Women's participation in decision-making in AF activities is significant for food security and poverty eradication. Normally, women use home base garden structures as a platform to make decisions on AF-related matters. They make commitments to participate in AF, even though their decisions are not considered (CIALCA 2011). It has been realized that women spend most of their time in AF practices than on their household tasks.

The participants confirmed that looking after small livestock was their responsibility as sole decision-makers in their households. The management of small livestock is women's responsibility because it does not require any permission from their husbands to sell it to generate income. Harsch (2004) affirms that women contribute 60-80% of the entire labour force of AF practice in food crop production and weeding operations.

Women participants (58%) agreed that they did not have their women's group nursery because of a lack of knowledge and financial support. Phillips (2013) affirms that women must have access to financial facilities to participate in decision-making processes and contribute effectively to AF practices. Finance availability can also positively contribute to job creation opportunities for the local community, food security, and poverty alleviation.

The participant claimed that:

Hmm...this is very disturbing that AF practice is so neglected and there is no financial support from any financial institutions, even the government is very reluctant to support women's projects. The government is failing even to provide agricultural inputs (15W).

Women's lack of access to financial resources and credit facilities contributes to their lack of participation in decision-making in AF practices (FAO (2017)). The lack of financial resources in Umvoti hindered women's decision-making about AF, hence, they spent extended hours of paid and unpaid labour in agricultural activities.

This puts more pressure on women to establish their community-owned nurseries to produce seedlings rather than purchase them from commercial nurseries. Women lack control over financial management, particularly in their households. The participants confirmed that the lack of access and control over financial management was due to their participation in the household income which they spent on household consumption.

The current literature reflects that 80% of poor rural women depend on food crop production. In cases where husbands require finance to purchase farm supplies, they request money from women (Mulyoutami et al. 2012). Women's access to financial services can contribute to poor rural women's social and economic empowerment (FAO 2017).

The availability of financial resources to poor women is significant to enhance their food crop production and addressing food security challenges in the rural community livelihoods (Mulyoutami et al. 2012; FAO 2017). Women's lack of access to financial resources and credit facilities is a contributing factor to their lack of decision-making in AF practices.

Poor rural women's access to financial services enables them to purchase the relevant agricultural inputs, labour, and the required equipment for their agricultural activities.

It also enables them to participate actively in decision-making in AF activities and provide basic family requirements to sustain their family livelihoods through AF practices (Mulyoutami et al. 2012; FAO 2017). These resources were lacking.

Harvesting of AF products is collecting a matured crop from the fields. The term harvesting can be used interchangeably with reaping, which means cutting cereal and pulse for harvest as part of the harvesting process (Almekinders and Louwaars 2002). Harvesting can be carried out manually or mechanically using different harvesting methods. Most rural areas where women are allocated with small AF practices use manual harvesting methods.

Women's participation in decision-making in AF plays a crucial role in harvesting operations. Manual harvesting is the most labour-intensive activity carried out during the growing season (Almekinders and Louwaars 2002). Hence, women contribute a high percentage of labour during the harvesting operation.

Even though some household members are not participating in AF practices, they assist during harvesting period operation, depending on the magnitude of the crops to be harvested. Rhoda (2015) affirms that African women account for only 68% of the harvesting operation, but 72% are involved in weeding and 98% in processing.

The participants confirmed that their decision-making in harvesting focused on the vegetable crop, root and tuber crop, cereal and pulse crop harvesting, and less on cash crop harvesting as that was mainly for commercial value.

One said this:

Hmm.... I am a widow with three children, and my husband died three years ago; I have been involved in home garden projects with other women where we collectively made decisions on all AF activities, including harvesting. Thus, my responsibility has been to harvest vegetable crops, root and tuber crops, cereal and pulse crops, and cash crops (7W).

The majority (98%) of women participants confirmed that they made a collective decision about their participation in harvesting operations. However, their participation in harvesting was normally limited to food crops and minimal to cash crops and livestock, which were regarded to be a male domain. Cash crops and livestock, because of their commercial value, are dominated by males (Rhoda 2015).

Rhoda (2015) affirms that African women account for only 68% of the harvesting, and 72% are involved in weeding and processing operations. The participants acknowledged that their involvement in harvesting was high in food crop production such as vegetable crops and minimal in other crops such as cereal, pulse crops, and cash crops.

One of them said,

Although, in my household's male-dominant decision-making process, in most cases, when it comes to decision-making in matters about vegetable crops, root crops, and fruit tree crop production, we as women group through our home gardens projects we make decisions on domestic consumption and marketing (4W).

Women contribute the most significant percentage of decision-making on vegetable crops concerning domestic consumption and marketing of AF products. The participants confirmed that their contribution amounts to 60% of food crop production in Umvoti.

This established that women in poor rural communities were the critical knowledge custodians of various AF practices. Kapuya and Sihlobo (2018) affirm that women play a significant role in deciding on the number of food crops to be consumed and surplus for marketing.

Women participate in food crop production such as vegetable, root crops, cereal and pulse crops, fruit trees, and cash crop production mainly for management, domestic consumption, and fruit marketing (Kapuya and Sihlobo 2018). Women's involvement in decision-making in harvesting is limited to subsistence food that contributes to economic activities and enables them to generate sufficient income.

One of them had this to say,

Uhhh...normally, husbands as the household's decision-makers decide on cereal, pulse and livestock, but because they are always away from home, we were obliged to make most of the household decisions (5W).

The participants agreed that, although they usually decided on food crop production, they also made decisions on livestock production, particularly small livestock such as goats and poultry or chicken. Large livestock production and management is essentially their husband's responsibility. Women agreed that they spent 68% of their time on small livestock.

Wellburn and Kuhlberg (2010) attest that decision-making in AF projects is affected by gender concerning the type of activities in which they are engaged. However, they attested that they were the fundamental decision-makers in managing and utilizing food crop production.

One woman had this to say,

Hmm...I have realized that my husbands have more interest in cash crop production, and I am more interested in food crop production, but in his absence from home because of his work, cash crop becomes my responsibility, and then I make decisions about the management of this cash crop (1W).

60% of the participants confirmed that, although they concentrated on food crop production, they also participated in cash crop management, harvesting, and marketing.

They confirmed that cash crop was their husband's domain because of their commercial value, and their husbands were migrant workers. They spent more time away from home than managing and harvesting the cash crops became their responsibility.

The participants attested that they could minimize harvesting workload through their experience and knowledge in harvesting. FAO (2018) affirms that women have experience and knowledge in different crop management, harvesting, and marketing, but they are constrained in the decision-making of that cash crop because it is regarded as a male domain and the high energy required for harvesting operation.

The predictable capacity of the harvested crop type controls the technique of harvesting method (FAO 2018). This made women carry out harvesting operations manually. The volume of crops to be harvested is determined by the harvesting method, based on crop type, which might be food crops such as vegetables or cash crops, which might be trees for timber or woodlot or labour intensive.

Post-harvesting operation is significant to keep AF products under the controlled moisture content to protect them against the loss of moisture content, decrease unnecessary chemical changes, and protect the product against physical damage (Audu 2009).

Harvesting operation handling, cleaning, sorting, packing, and cooling of AF products and seed collected is a women's responsibility.

The participants confirmed that they agreed on the usage of the sanitation process as a significant aspect to decrease the likelihood of pathogens contained in fresh produce.

Post-harvesting operation is also crucial to protect the harvested product against bruising and delayed decomposition.

One woman said,

Ooh...yes...post-harvesting is very crucial it has provided me with an opportunity to process efficiently harvested crops and separate good crops and stored them in a safe place to be used during the following planting season, use the remaining crop for domestic consumption, and surplus crops to be sold to the local market (7W).

Another one had this to say,

Although I have knowledge and experience in seed handling and storage, my knowledge of seed cleaning, sorting, packing, cooling, and transportation is insufficient, I require more training so that the seed I am collecting and processing does not get infected while in storage. Thus, the intervention of the government and municipality will be appreciated so that I can process and store good quality seeds for the next planting season. The knowledge that I have gained through our home base garden projects where we share this information with other women (10W).

The majority (98%) of women participants confirmed that they collectively decided on all matters about post-harvesting activities. The women alluded that they became overwhelmed when it came to post-harvesting season.

Through the indigenous knowledge and experience they had acquired, women were able to perform post-harvesting tasks effectively and efficiently (Sarker, Itohara, and Hogue 2011). Women reflected that their involvement in post-harvesting operations enabled them to acquire excellent knowledge and experience in post-harvesting activities such as handling, cleaning, sorting, packing, cooling, storage, and transportation of harvested AF products.

Women's knowledge and experience ranged from seed collection, different storage areas and conditions suitable for different crops, and various food processing and storage (Sarker et al. 2011). Women realized that knowledge and experience in post-harvesting had provided them with potential decision-making skills in post-harvesting operations.

The participants confirmed that their involvement in women's discussion groups in AF practice helped them to make informed decisions about seed storage, processing, marketing, and transportation of harvested AF products to the local market (Anderson 2013).

The participants confirmed that they participated in seed and AF crop cleaning, sorting and neatly packing vegetable crops, and transporting AF products to local markets. Based on women's experience and knowledge in the AF space, they reflected that they had vast and extensive experience and knowledge in processing, storage, and marketing of food crops to sustain their family livelihoods. Women participants acknowledged that their husbands delegated them to market cash crops on their behalf.

Marketing of AF products encompasses various services ranging from selling the harvested AF product from the field of operation, which might be the farm or the home garden to market or the customer (Asenso-Okyere and Jemaneh 2012). The marketing of AF products encompasses the preparation, consolidating, and direct handling of AF produce to satisfy the customers.

Generally, several interrelated activities are tangled in this operation, including the preparation of the product, planting, and harvesting of AF products. However, before marketing the product, it is imperative that farmers embark on the grading of the product according to the standard grading policies, package, storage, transport, provide market information, distribute, and advertise the product to be sold (Asenso-Okyere and Jemaneh 2012).

The term encompasses the complete variety of supply chain operations for AF products, whether through an ad hoc or shared AF system (Asenso-Okyere and Jemaneh 2012). Although Umvoti women's involvement in AF practices is mainly for domestic consumption as they anticipated, the marketing of AF products surplus provides them with some income-generating opportunities to purchase small household items for domestic consumption.

One of them said,

Eish...there is nothing much for marketing because our plots are very small and we produce for our domestic consumption and sell surpluses. The roads are very bad and people could not come to purchase our produce (10W).

The participants confirmed that they had been participating in the AF marketing space for quite a long period, but on a minimal scale.

Their focus was more on marketing processed and unprocessed AF products and making their own marketing decisions in this space.

This is what one of them said,

Uhhh...before I embarked on a full-scale AF practice, I was producing vegetable crops from my small plot just behind my home only for domestic consumption, and to sustain my family's livelihoods, but after I joined the women's group in AF, I now managed to sell surpluses to the local community (3W).

98% of participants confirmed that the use of women's groups as a platform to discuss women's participation in AF, a marketing strategy used to be their most significant accountability. Women play a significant role in the marketing and processing activities of AF products.

Women contribute to the marketing of cash crops through the collection of fuelwood and animal food such as fodder and they sell it to the local community to generate income for quick cash. Normally, women dominate the AF market because of their extensive involvement in supplying food crops products (Asenso-Okyere and Jemaneh 2012).

One woman said,

I normally sell my AF produced from my plot during the old age pension days, hence this is the only local market where women sell different commodities, and also where these AF commodities are in demand. I normally sell sweet potatoes, *amadumbe*, beans, *bhatata*, and poultry/ chickens (14W).

Women confirmed that they sold food crops surpluses and small livestock such as poultry/ chicken during old age pension paydays. Women confirmed that they preferred poultry production because; they could look after the small stock and chicken while they were busy with other household tasks.

Mostly, women prefer chicken because they can sell them at any required time to generate quick and frequent income. The participants confirmed that they decided based on their knowledge and experience in poultry production (Asenso-Okyere and Jemaneh 2012). Women make decisions based on their understanding of what works best for domestic requirements.

This is prevalent in poor rural areas such as Umvoti, where women flock to the nearest food markets to sell or purchase AF products for their domestic consumption. Generally, the management of livestock has been realized to be women's sole responsibility, especially during the absence of their husbands.

The participants commended poultry because it required less investment and it was always kept within the households as an activity that women could take care of, while they were busy with other activities in the household as the household caretakers.

This implies that women practicing AF would use poultry manure which does not require any funding assistance and transportation from the household to the field (Asenso-Okyere and Jemaneh 2012).

Women make decisions based on their experience and understanding of the broader process of AF. There was a notion that transportation of women's harvested AF products for marketing purposes posed a challenge because of poor road infrastructure.

One of the women said,

Most of our husbands are migrant workers; they always work away from home and leave us with more responsibility to make decisions on all household tasks, including marketing AF products and small livestock such as chickens and goats (2W).

Women play a crucial role in AF practice in the absence of their husbands (Singh and Mishra 2013). The participants confirmed that in the absence of their husbands, they assumed decision-making responsibilities in the households regarding cash crops and livestock. Hence, the majority are unmarried, divorced, widows, and separated.

Women participate with their absolute passion in all AF activities, from food crop production to cash crops and livestock. Women's participation in livestock production has been a long-lasting worldwide practice, as livestock plays a tremendous role in enhancing their financial conditions (Younas, Gulrez, and Rehman 2007).

The participants confirmed that they played a substantial role in livestock marketing, as they participated directly in operations concerning breeding, feeding, controlling, and livestock health care. It was observed that in rural areas such as Umvoti, women participated in several household tasks from the beginning of the day to the evening.

The participants confirmed that they sometimes shared responsibility for decision-making with their husbands for caring for livestock and other activities associated more with them than men. Women alluded that they played a crucial role in handling poultry, milk production animals, and piggery. Women take care of additional livestock accommodated and nurtured within the household (Younas et al. 2007).

The participants agreed that they decided on the marketing of their livestock in their households. However, these decisions were based on the fact that their husbands were migrant workers, and they were always away from home, but in the absence of their husbands, they consulted with their in-laws, either their brothers-in-laws or fathers, to guide them on any decision they made.

Studies in Vietnam determining women's contribution to AF activities decision making revealed that women's participation in decision-making in AF, particularly in livestock, was minimal because of low education or literacy levels (Singh and Mishra 2013).

Transportation of AF products from rural areas to the closest markets is a significant factor in enhancing women's AF productivity (Sishuba 2016). Women participate in producing vegetables for domestic consumption and selling the surplus.

Women sell the surpluses to local markets and sometimes to urban areas around the Umvoti area. However, their small plots produce various quantities of vegetables to sustain women's household livelihoods. Women witness an increasing number of vehicles from urban areas flocking to purchase vegetables from them, to further sell them to urban communities through their commercial markets.

Primarily, Umvoti women are generating income through the sale of their AF product surpluses. However, women farmers are experiencing constraints of the poor road infrastructure, which contributes to the low sales of their AF products, hence the number of cars coming to purchase vegetables is decreasing.

The participants confirmed their focus on food crop production for local markets such as tomatoes, cabbages, and butternuts. There was a great demand to sell the surplus to another open market, where the transport to carry the product was a requirement.

One of them said:

Eish....we are the poor rural areas and the roads conditions in these areas are very poor and are not maintained, therefore we are experiencing challenges in transporting our AF products to the markets in urban areas, we are only relying on the local markets and to those who come from urban markets to come and buy our vegetables in bulk for school feeding projects (7W).

The National Government of South Africa initiated the revitalization of the Agri-Park, where all farmers would sell their AF products for further distribution to other consumers and school nutrition programmes. However, this initiative was aimed at local farmers accessing markets through these Agri-Parks.

The revitalization of Agri-parks sought to stimulate commodity values for local communities to benefit by selling their AF products, particularly women responsible for food crop production to sustain their families (Sishuba 2016). Women participants confirmed that Agri-parks played a vital role in their lives as part of their expansion investment growth as smallholder farmers.

Women farmers were encouraged to make use of these Agri-Parks to access markets situated in their areas of jurisdiction. However, cars from the cities and townships were still flocking to Umvoti to purchase vegetables because women farmers were unable to supply Agri-Parks owing to the lack of transport to the Agri-Parks in the urban areas.

The participants confirmed that transport from the urban areas was still flocking to their areas to purchase vegetables. Women were selling fresh vegetables from their plots and at a cheaper price as compared to the old produce stored in the Agri-Parks. Therefore, women acknowledged that cars from urban areas were still coming to purchase vegetables from them.

Women alluded that as soon as they received messages from the urban markets reflecting that trucks or cars were coming and the quantities of vegetables required, they gathered their products in buckets and sold them individually to the buyers.

Women reflected that people who purchased vegetable crops were involved in school feeding schemes and supplied Agri-Parks.

Women confirmed that they concluded the sale of all AF products surpluses to be locally marketed. However, it was realised that vegetable crops were sold to the people from the urban and city areas who came by their cars and trucks to purchase them in bulk. Women participants indicated that with the introduction of Agri-parks, their lives transformed from the informal sector to better incorporation and participation in the AF economy.

The participants affirmed that the universal trust that transportation had, had a tremendous impact on women farmers' production level and the crop price. However, women acknowledged that this had reflected high percentages of transportation of their AF products at all levels. They confirmed the significance of transportation of their AF products to the urban or city markets. Consequently, in the absence of suitable and adequate transport facilities, women farmers were unable to produce an adequate supply of AF products from their local farms.

However, this would increase the price of the few available crops in the markets, and as the price increases, people would be unable to afford them (Ojibore and Afolanyan 2009). Similarly, the community's health would be affected, and this would negatively impact the production level of AF industries and the general economy.

5. 4. Conclusion

This chapter discussed the findings of this study generated and analyzed through thematic analysis. The conceptual framework used during the different themes discussions is discussed and presented in this chapter. The conceptual framework presented in this chapter is centred on the participatory theory, which recognizes women's participation in decision-making at all levels.

The themes generated and analyzed, ranged from land and land rights to land preparation to transportation of AF products to the market. The chapter elaborated on women's involvement in decision-making in AF practices as an activity influenced by the nature of household heads.

The chapter discussed how women accessed the resources such as land and land rights on which they practiced AF and reflected their lack of access to other resources such as education, credit facilities, extension services, and markets as the main factors that contributed to their lack of active participation in decision-making in AF activities.

The chapter briefly reflected that other factors such as traditional stereotypes and customary laws, contribute significantly to women's decision-making in AF activities.

The chapter presented the concerns raised by women participants that customary laws under traditional authority prohibited them from accessing land if a woman was unmarried.

Women inherited land from their deceased husbands, mothers, uncles, or brothers. The findings of this chapter revealed that land transfer can also be done on merit, and land purchases are entirely forbidden.

The chapter discussed that women who were household heads, in the absence of their husbands, being migrant workers were offered first preferences in decision-making processes because they had access to land through their husbands. Unmarried, divorced, and separated women participated in decision-making in AF, but their contributions were frequently ignored because they were not recognized in the development programmes owing to a lack of access to land.

The chapter revealed that women who stayed with their husbands experienced challenges that their husbands disallowed them to participate in any decision-making processes because of African stereotypes and cultural beliefs. Marketing and transportation of women's AF products were discussed in this chapter.

The chapter concluded by reflecting that women, with their knowledge and experience, actively participated in decision-making in AF activities; this resulted in women planting more trees than their husbands. Further, the chapter discussed the constraints that women farmers were experiencing concerning their access to the market, lack of support and infrastructural services such as packing and storage of crops facilities and transportation of their AF products, and availability of marketing information and facilities.

The chapter presented the application of manure, spreading out the organic manure in the field where AF practice was carried out (Risse 2017).

This confirms that poultry and kraal manure applications contain nutrients that support crop production and physically and chemically enhance soil properties.

This study revealed that organic manure application improved the absorption of soil nutrients by the roots of tree and vegetable crops. In Umvoti, the application of manure was observed to be women's responsibility, where they were applying manure to vegetables, fruit trees, and cash crops.

The study revealed that the majority 78% of women participants in Umvoti confirmed that they contributed a higher percentage to manure application because of the high knowledge and experience they had about the seed collected, prepared for planting, and the rate of manure application in the field. The chapter discussed different methods used for manure application to enhance soil fertility and stimulate tree and vegetable growth.

The chapter concluded that further engagements with women participants reflected a significant interest in organic manure application; hence, no current restrictions on the use of chicken waste or kraal manure for vegetable crop production.

Through data generated and analyzed, the study revealed that the lack of access to information, labour, education, access to a secured land tenure system, and household status had significant impacts on women farmers' choice of decision-making in the adoption of organic manure in AF practices.

Women's involvement in the manure application decision-making enabled them to enhance their soil organic levels, structures, water infiltration, and holding capacity.

This Umvoti study reflected that most of the women in the study area had no form of education, which hinders their participation in decision-making in AF practices.

CHAPTER 6

LEARNING ABOUT AGROFORESTRY DECISIONS, EDUCATIONAL PROCESSES AND STRATEGIES THAT ENHANCE WOMEN'S PARTICIPATION IN DECISION-MAKING

6. 1. Introduction

The previous chapter discussed and analyzed the research findings on how women participated in decision-making in agroforestry (AF). The chapter further discussed the themes generated and analyzed to address the first sub-question about the nature of women's participation in decision-making in AF.

This chapter presents and analyses the findings on learning about agroforestry decisions, educational processes and strategies to enhance women's participation in AF decision-making. The principle behind these questions was based on the critical facts for women's knowledge acquisition and transforming them into their experiences.

This illustrates how women acquired knowledge and experience in AF; hence, women always work in groups to achieve the anticipated objective, which is women's participation in decision-making in AF.

This means that women believe in socialism, thus, social learning was used as the platform for their learning process.

Social learning reflects how women socialize to understand decision-making. Kolb's experiential learning theory was not used to explicate the learning techniques that most women farmers employed to obtain new AF knowledge. Experiential learning theory is described as "the process whereby knowledge is created through the transformation of experience" (Kolb 1984).

Experiential learning consists of four stages: concrete experience, reflective observation, abstract conceptualization, and actual experimentation. Experiential learning theory was criticized for its unsuitability for adult education, because of various processes simultaneously, resulting in omitted other stages.

Although Kolb's theory has been broadly used in adult education, it neglected to reflect how individual farmers communicated with each other and the condition to improve their learning on decision-making in AF knowledge (Duveskog et al. 2011).

Although this theory encompasses formal, non-formal, and informal learning, it was extensively criticized because its stages were not practical (Forrest 2004). However, these critiques proved suitable for this study because experiential learning has some social learning elements relevant to women farmers acquiring their AF knowledge through formal, non-formal, and informal learning.

Formal, non-formal, and informal education fall under experiential learning through the portrayal of self-directed learning and socialization (Forrest 2004). The study's focus is on how women learn about decisions in AF. This includes educational processes and strategies to enhance women's participation in decision-making.

Using the non-formal and informal mode of learning reflects how women learn about AF decisions through various pieces of knowledge and transform them into their experiences. Makinde and Shuronke (2013) assert that Indigenous Knowledge (IK) is a circumstantial mode of experiential learning carried out through socialization.

IK is perceived as local knowledge formulated from the state of affairs and transferred to the next generations through socialization for the community to sustain their livelihoods (Makinde and Shuronke 2013). Women farmers usually share information about their AF practices, thus, IK is regarded as a relevant source of knowledge, and mainly where women farmers use the collective approach to learn.

The collaboration and cooperation concepts of learning from each other will be discussed in this chapter. Ntseane (2011) reflects on transformative learning in her study carried out in Africa. Socialization from an African perspective is central to community learning (Ntseane 2011).

In addition, the current knowledge domain and IK have similar effects and can be used simultaneously. Women farmers have realized that it is practical to integrate these two modes of knowledge to maximize the benefits.

The recommendation in this aspect is based on the fact that technicians and extension officials should concentrate on supporting women farmers to identify the current equilibrium between IK and the knowledge domain in their production strategy (Kohler-Rollefson 2002).

In this study, it was perceived that gender quality socialization affects how women learn about AF decisions. It was critical to evaluate how socialization influences equality and knowledge surface, Freirean pedagogical theory of the oppressed was drawn in as an extra theoretical lens (Die 2002).

The study could not employ experiential learning to determine how women learn about AF decisions because women lack access to various fields, including land and decision-making; thus, women's socialization is the mode to learn about AF decisions from different ways of socialization.

6. 2. Learning Context

The term "**learning**" is clarified in this chapter to reflect the stages of the learning process, which enable women to learn about decisions in AF and understand educational processes and strategies used to enhance women's participation in decision-making in agroforestry. This chapter discusses various forms of learning that demonstrate how women farmers have acquired knowledge and experience in AF activities.

The chapter focuses mainly on learning in which women participants access diverse educational setups, focusing on largely formal, non-formal, and informal strategies.

The chapter analysed themes and sub-themes generated through thematic analyses to address how women learn about agroforestry decisions and educational processes and strategies that can enhance women's participation in decision-making in agroforestry questions and concludes by summarizing what has been presented throughout the chapter.

Learning is perceived as a continuous process originating from a child's birth until death (Fickel, Abbiss, Brown, and Astall 2018). The study addresses how women learn about agroforestry decisions, with a view that women have been awarded a primitive state in African countries where the patriarchal system prevails (Apusigah 2013).

Generally, learning is confused with education, which is just a part of the learning process. However, there is a strong belief that knowledge is acquired through learning and experience. Therefore, the learning process plays a vital role in developing the entire people by influencing individuals' understanding of their environment (Fickel et al. 2018).

Thus, learning proves practical and essential to provide relevant knowledge of the theme, which education cannot deliver. Most poor rural communities, particularly women, lack education but achieve their knowledge and experiences on their various commercialism through learning. Therefore, it has been realized that people learn in multiple ways, such as extension services, traditional knowledge, indigenous knowledge, formal education, individual learning, and group learning.

Jarvis (2008; Delanty 2003) affirms that experience determines the extent to which the existence of the body and mind compared agree to the external world. Women learn their experiences from their gatherings to influence their minds and bodies and how they interpret the condition. The transformed, developed, and experienced people are the consequences of learning.

However, learning does not depend on an individual but is recognized as a collective learning process because it is a social construction process established through social institutions (Delanty 2003). Women's learning ethics flow through a cognitive process of socialization that exists in their households.

There is a notion that cultures descend on their norms based on conventional ethics and accepted actions in this improvement procedure.

With this socialization process, the study visualized the creation of women or individuals that are effective and efficient in their societies and guarantee their incorporated norms.

Most scholars who have done more significant work about how women learn about agroforestry decisions believe that there is no single prescribed learning process; hence, this relies on what the term means to the individual (Knowles, Holton, and Swanson 2011). The study went through each learning definition, and different words describing the learning processes, which were identified.

In other words, there was an inspiration, growth, inclusion, transformation, and equality. Therefore, for this study, it is preferred to use the word "growth," which, to my understanding, suits this study well.

Growth was selected because it describes learning as a continuous process through which the information is absorbed and retained to achieve anticipated objectives such as skill enhancement and capabilities (Knowles et al. 2011).

Social learning was relevant for this study; hence, it seeks to understand how women learn about agroforestry decisions and educational processes and strategies currently in place, intending to enhance their full involvement in decision-making processes in AF practices (Pandit 2017). Learning as a process has nothing more extraordinary than the behavioural transformation of knowledge to experience.

Further, learning is considered to have significant elements such as cultures and local languages.

Culture is regarded as our subjective reality, enabling individuals to determine how the world and experience are perceived (Jarvis 2008). Women's learning about decisions in AF practices has become their culture to sustain their family livelihoods through enhanced AF technologies for food crop production.

All studies conducted in various parts of the country reflect that women's learning and involvement in AF practices contribute to their knowledge of producing healthy food crops for food security and generating income for other services that they cannot achieve through AF practices.

The prevailing evidence from the literature reflects that the lack of women's access to education deprived them of opportunities for growth (Staatz and Dembele, 2007).

However, this has no exception for poor rural women of Umvoti. Thus, learning would allow them to grow in decision-making processes at all levels.

Data generated and analysed reflect that these significant themes appeared to answer sub-questions two and three. Therefore, the chapter addresses how women learn about agroforestry decisions, and what educational processes and strategies are in place to enhance women's decision-making in agroforestry.

This chapter emphasizes various ways, such as non-formal and informal learning, as two effective forms of learning about women's knowledge about decisions in agroforestry practices.

Learning as a continuous process is regarded as a sustainable source of knowledge, particularly for adults, as they often pursue acquiring knowledge to accomplish their social responsibilities in their households (Mashavave, Mapfumo, Mtambanengwe, Gwandu and Siziba 2013). The information that women might require as women farmers to accomplish their responsibilities, relies on individuals' life stages.

Women who practice AF continuously pursue knowledge through different ways of learning. The participants in Umvoti were observed to lack access to information about AF decisions. Therefore, in this background, women should be equipped with the knowledge to enable them to learn about decisions in AF so that they can participate effectively and efficiently in decision-making. Mashavave et al. 2013) attest that the daily roles and responsibilities in which women are involved necessitate women's equipment with more knowledge.

This provides analyses of how women participants learn about AF decisions. However, various educational processes and strategies that are in place to create diverse methods and opportunities for multiple learning systems, are discussed in this chapter.

6.3. Social Learning

Social learning is categorized mainly as part of the experiential learning cycle described by Kolb, as steps of active experimentation, abstract conceptualization, reflective observation, and concrete experience (Kolb 1984). From the experiential learning perspective, as described by Rogers (1969) and Hoover (1974), learning is a personal quality that comprises the entire individual's feelings and perceptive characteristics in the learning experience.

Social learning, as a form of experiential learning, encompasses excess to intellectual learning emphasized mainly by learning administration as learning behaviours (Rogers 1969; Hoover 1974). This study is guided by feminism theory, which recognizes that women's socialism emerged as a theory during the 1970s, concentrated on women's development projects (Chant 2012). The calls for the women's treatment in development by contesting that modernization has different impacts on men and women.

Feminist theory integrated social learning to articulate various theoretical and applied techniques to influence females' equivalence (Napikoski 2017). Through the lens of socialist feminism, sociologists recognized the need to move to integrate females curved on growing programmes, through the expectation of eradicating lack and reducing females' slight social, and monetary situation.

However, it is crucial to reflect on what women's equality means to enhance females' contribution to development processes and contribute entirely to economic growth. The focus of the study is to explore the nature of women's participation in decision-making in agroforestry. Therefore, social learning is a suitable concept for this study to address how women learn about agroforestry decisions, and what education processes and strategies are in place to enhance women's decision-making.

An essential connection exists between knowing and learning (Freire 1972). Women's social participation in development projects has evolved to incorporate social learning (Jarvis 2008). There has been a recognized mutual way of achieving anticipated objectives.

As defined by other scholars as a continuous process that commences before the individual's existence and terminates upon the deceased of an individual, social learning is regarded as a permanent process, which exists within the human being for the rest of the entire life.

Therefore, an individual creates and transforms knowledge into experience, abilities, perceptions, opinions, norms, and feelings. Thus, as an individual grows through different levels of life, acquires knowledge, and transforms it into an experience to develop experiential learning.

Social learning is composed of self-reflection, the improvement of multi-layered participatory processes, the individuals' and communities' reflective capacity, and the capability for the social movement to transform the political and economic framework for the worse.

Social learning is knowledge transformed into experience. This knowledge often happens when individual participants collectively process the command, skillfulness, self-assertiveness, psychological features, and feelings in a learning situation classified by a significant active participation level.

However, social learning is considered shared experiences and reflections, generally used as the common theme to enable women to realize the structural values of resources, AF interventions, and social and institutional social relations based on local perceptual experience.

In this study, social learning is acknowledged as the cognitive learning process where women practically do things, gain knowledge, and transform it into experiences and reflections.

Social learning was employed as a means of participatory learning and activity. Social learning is used as the organized transmission channel to enhance women's decision-making and contribute to the awareness, motivation, and capacitation of rural communities at grassroots levels.

Socialists object to the prevailing prejudice and construct about women's knowledge, and experience through observations, focus group discussions, and individual interviews.

Social learning concepts enabled women to connect with relevant theories and apprehension about the subject matter acquired in the field situations.

Social learning was applicable in this study; hence, it enabled the researcher to understand how women learn about AF decisions in their development activities and explore what educational processes and strategies are in place to enhance women's participation in decisions making in AF.

Mashavave et al. (2013) affirm that women use various ways to reflect on how they learn about agroforestry decisions and educational processes and strategies that are in place to enhance women's participation in decision-making.

A shred of overlapping evidence prevails just between all forms of learning. At the same time, Kolb's hypothetical situation provides the exploratory perception for analysing how women learned about decisions in agroforestry.

The study reflects the discussions on how women acquired knowledge through social learning and proceeds to analyze the different forms of educational processes, which are non-formal and informal learning and strategies employed by women to enhance their participation in decision-making. These are inclusive of traditional knowledge, individual education, group learning, extension services, field days, workshops, demonstration plots, and radio and television programmes are discussed in this chapter.

Finally, the chapter will conclude by analysing the knowledge of AF practical gaps and the extent to which Indigenous Knowledge (IK) contributes to women farmers learning about decisions in agroforestry.

The concept of social learning was adopted for this study because it has been recognized as a cognitive process encompassing continuous involvement with an individual's situation. An individual generates knowledge from experience compared to the classroom (Dewey and Dewey 1915).

In Umvoti, women participate in AF using the knowledge and experience of their fathers, mothers, and grandmothers or through their indigenous knowledge. The knowledge and experience that women are using are generated through their participation in development projects, particularly agriculture, where they learn by doing.

Therefore, the prevailing conditions negotiated in advance may involve understanding other women's perceptions, opinions, views, goals, and beliefs centred on good cooperation among women's groups. Maarleveld and Dangbegnon (1998) assert that interactions among women offer chances for alternatives and diversified ways of getting things done.

The interaction among women might be fruitful when they can be non-judgmental, and engage in the dialogue without dismissing other women's views and opinions just because they have different views and opinions. Women should learn from one another through information sharing.

Therefore, social learning was adopted as a suitable concept for Umvoti women, based on the literature reviewed. Social learning reflects women's knowledge and experience as a repeated model comprising four diverse learning styles: concrete experience, abstract conceptualization, reflective observation, and active experimentation.

Hence, it recognizes women's reflections and activities that reflect how Umvoti women learn about decisions in AF. It further shows the educational processes and strategies to enhance women's participation in decision-making. It is reflected in women's continuous interactions, and information sharing, which influences their future decision-making processes.

6. 4. Feminists' perspectives

This chapter reflected on what feminists are alluding to in social learning as a concept. Women are frequently constrained to social learning chances more than their male counterparts (Higgs and van Wyk 2007). Various feminists contest that social learning should offer women an opportunity to put more effort and develop their social ability, and individual skills, enhancing their knowledge, and keeping up with their social obligations (Lekoko and Modise 2011).

Literature from African countries reflects most information on feminists and social learning from the northern countries. However, the literature is unable to address women's interests from the southern countries.

Women's concerns are about various factors such as racialism, exploitation, neo-colonialism, and gender (Preece 2009). It is perceived that to realize the oppression that Southern African women are experiencing, suitable strategies should be adopted (Preece 2009).

In contrast with the Southern feminists, the Western feminists' perspective, is that African feminists women opt to include men in their discussions (Goredema 2010). Thus, in this context, African women acknowledge the presence of their men because of their patriarchal character in most African countries. Therefore, men have a crucial role in women's emancipation through learning (Apusigah 2009).

Based on Freire's pedagogical theory of the oppressed, women's consciousness development enhances the possibility of individuals liberating themselves by challenging and changing the social structures, dehumanizing them, and acting to build a new society (Freire 1973).

Through Freire's lens, emancipatory education is the type of education that looks for opportunities where women can demonstrate that they are engaging in dialogue and taking action because of increased awareness of a situation.

In this context, this study included Freire's philosophy of emancipatory learning to understand what educational processes and strategies are used to enhance women's participation in decision-making in AF. Emancipatory education will create an enabling environment for the oppressed to challenge critically any domination and exclusion that reduces maximum and reasonable involvement of the oppressed in their community_lives (Rhoades and Torres 2006).

The Socialist feminists advocated the Gender and Development (GAD) approach, which recognized that African men and women are bound to work collectively to eliminate all forms of oppression. Collective working can improve the understanding of men's roles in social institutions in women's oppression (McFadden 2010). African feminists contest the western conceptualization of the 1970's Women in Development (WID) movement that did not appreciate women's indigenous knowledge (Goredema 2010).

In the African context, women's social learning requires an understanding of the hostility between men's oppression, group action processes, and the preservation of indigenous values (Gordon 2010). Black feminists claiming that they are self-directional, independent, and self-reliant criticized the philosophy of colonial education (Gordon 2010).

African feminists' philosophy claimed that black feminists' social learning embraces mutuality and degrees of liberty, which acknowledges the seriousness of others instead of individualism.

Furthermore, it requires men's participation in women's emancipation and empowerment with women's learning inclusive (Omolewa 2002). Social learning and education can improve individuals' opportunities for a better healthy lifestyle. It goes beyond doubt that social learning and education significantly contribute to the nation's economic system (Preece 2009).

Social knowledge is essential for women as it enhances their societal positions regarding decision-making ability, leadership skills, freedom, and capability to associate worldwide.

It is worth noting that women farmers require learning and education to practice farming effectively and efficiently (Suen 2013).

This will enable women to embark on informed decision-making strategies concerning their AF activities. Regrettably, in most African families, including South Africa, where the more significant portion of land is still rural and under the traditional authority administration, girls' and women's education is not a priority (Suen 2013).

The feminist styles are employed to assist women in challenging the current and existing circumstances and pursuing critical analytic thinking regarding women's empowerment, oppression, and dominance. Modern farming methods and new technologies are vital skills for women farmers through social learning (Preece 2009; Tapsoba 2002).

Women who have limited access to modern farming methods and technologies would have less access to primary education (Preece 2009; Tapsoba 2002). Therefore, women are negatively affected, regarding personal identity, vocalization, and dominance. However, in most cases, African women's social learning processes foster household chores and societies (Morojele 2009).

Thus, cultural and social learning structures are discontinuous, while simultaneously, the current learning opportunities are inaccessible because of women's extended working hours. Furthermore, women's social learning is related to independence and freedom, and women are restricted in this respect because of their household tasks commitments (Preece 2009).

There is a perception that those employed in the informal sectors cannot access training, which significantly contributes to their marginalization and denies them an opportunity to access financial assistance. However, this significantly affects women because they cannot participate in a broader scope of AF activities (Preece 2009; Tapsoba 2002). In this context, social learning is exposed to criticism. Social learning criticisms were the consequences of neglecting the public and private domain complexity.

It further denies women opportunities of getting access to education and training (Passarelli and Kolb 2012). The significance of women farmers having access to learning processes for the rest of their lives to achieve their objectives will be appropriate for women to learn from their experiences.

6.5. How women learn about agroforestry decisions, and educational processes and strategies enhancing women's participation in decision-making in agroforestry.

In the previous chapter women participants reflected that they participated in AF practices, but not in decision-making processes. This suggests that women lack platforms and formal structures, which can represent them in decision-making processes.

The participants claimed that they were constrained in decision-making because of their levels of education and illiteracy. Although women participate in daily household chores and work for daily wages for their livelihoods, those obligations interfere with their ability to actively participate in meetings, which results in them being unable to participate in decision-making (Preece 2009; Tapsoba 2002). Their voices are ignored in decision-making meetings.

It was realized that if women or marginalized individuals attended the meeting, they would be unable to air their opinions, and curiosity to avoid being disrespectful to their husbands in their families (Preece 2009; Tapsoba 2002). Women reflected that they were ignored because of their low-level economic status, and were ignored and neglected because of assumptions that they would work throughout the day to generate income for their families and could not attend the meetings.

However, women learn about decisions in AF in various ways. Based on the themes generated and thematically analysed, that reflects the mode of education required for women. The themes that were developed and explored were further reduced to sub-themes.

Social learning as part of experiential learning represents different learning elements (Kolb 1984). The study determined that the modes of learning used by farmers to acquire knowledge were informal, non-formal, and formal learning.

Informal learning is the process of unintentional learning planned by any service provider (Ainsworth and Eaton 2010). This form of education is a continuous learning process that commences traditionally throughout an individual's lifetime. Informal training is regarded as the most universally used training method in society.

During focus group discussion, the study realises that informal learning is suitable for women farmers since it offers basic education from childhood to adulthood stage (Cherry 2020). Women participants generated self-directed learning and indigenous knowledge learning as essential two sub-themes under informal learning identified.

It is in this context that the study analyses these two sub-themes of informal learning.

However, women participants' participation in understanding learning and the significance of learning benefits is crucial; thus, women participants in FGD claimed that:

Although we are not sure, learning is a process that contributes to our knowledge which transforms into our experiences and understanding of our challenges better and enables us to learn to make effective and informed decisions and use our knowledge to improve our quality of life decision-making processes (2W).

Twenty per cent (20%) of women participants confirmed that learning is a process, which commences in the early stages of the youthful and teenage years. Further learning is acknowledged as a constant process that begins at birth and carries on until death (Cherry 2020).

People learn to employ knowledge and experience to contract new circumstances and develop interactions through this process. Therefore, most learning occurs haphazardly during our life, commencing with new experiences, attaining information from perceptions through reading newspapers, watching broadcast news, sharing information with support groups and associates, attending development meetings, and unanticipated experiences.

Cherry (2020) affirms that various life experiences allow women to select whether to learn or not to learn. Thus, social learning is different from formal learning, which comprises classroom teaching, training, mentoring, and coaching.

These types of learning possess some kind of construction that involves intentional learning.

One participant said,

We have realized that we have learned as we grow from our initial stages, we commenced learning when we were children from our parents, and we became ageing; we learned from our colleagues and our partners in the projects (10W).

The participants acknowledged that informal learning is a self-generated and lifetime learning process. The knowledge and experience that women have accumulated commenced in their early stages of life, where they began with learning at their early stages as kids from their parents, and as they grew older as adults, they learnt from their colleagues and allies and their partners in the development projects (Quisumbing and Pandolifelli 2010).

Women participants realized that even though they were ageing, they still learnt from the young people, particularly new AF methods and technology. In most cases, informal education and informal strategies occur as self-directed learning, which originates in how women farmers attain their knowledge (Quisumbing and Pandolifelli 2010). Women employed the strategy, which included self-generated observations, and indigenous knowledge.

Self-directed learning is a process where an individual learns without assistance from the service provider or an educator (O'Shea 2003). In this case, an individual identifies the learning requirements and objectives, develops the learning content, selects and puts in place suitable learning strategies, and assesses the expected learning result.

2 0% of participants confirmed that learning is a process, which commences in the early stages of the youthful and teenage years.

Learning is acknowledged as a constant process that begins at birth and carries on until death (Cherry 2020).

People learn to employ knowledge and experience to contract new circumstances and develop interactions through this process. Therefore, most of the learning occurs haphazardly during our life, commencing with new experiences, attaining information from the perceptions through reading newspapers, watching broadcast news, sharing information with support groups and associates, attending development meetings, and unanticipated experiences.

Furthermore, Cherry (2020) affirms that various life experiences allow women to select whether to learn or not to learn. Social learning is different from formal learning, which comprises classroom teaching, training, mentoring, and coaching. These types of learning possess some kind of construction that involves intentional learning.

Brookfield (2009) attests that self-directed learning is described as an independent learning process that is self-driven and self-motivated. It is worth noting that self-directed learning is the learner's responsibility; thus, active participation in the learning process is crucial. The Turkish literature on various studies reflects that the self-directed learning process concept is portrayed in numerous ways depending on what the learner wants to learn.

Self-directed learning manifested itself in various modes that pursue the experiential learning cycle where social interaction is inclusive (Brookfield 2009).

The studies conducted in Turkey on self-directed learning, refer to it as one-self-learning; others use self-regulated learning as a term reflecting self-directed learning (Bayer and Usinger 2015).

Although self-directed learning has been used interchangeably in various studies in different countries, there is minimal information about how rural women benefit from self-directed learning because most of the studies were conducted with University students (Brookfield 2009).

The findings of these studies from Turkey showed that self-directed learning is connected to higher levels of thinking skills such as creative thinking, problem-solving, and critical thinking, and omitting decision-making. Thus, this study is appropriate for the researcher to understand how women learn about AF decisions using the self-directed learning process as part of informal learning.

The description of indigenous knowledge differs from scholar to scholar as per their perceptions. Indigenous knowledge (IK) is described as a piece of cultural or traditional knowledge, belief, initiative, and pattern that traditional people generate throughout their lives in their cultural environment (Makinde and Shorunke 2013).

In this context, rural people employ indigenous knowledge, particularly women, to develop at all levels (Tella 2007). Indigenous knowledge is regarded as local knowledge that provides natural understandings and skills to social groups with the historical background of fundamental interaction with their cultural environments.

Thus, indigenous knowledge enables communities or individuals to sustain their livelihoods and families. The following testifies that women acknowledge the use of their indigenous knowledge. When one woman says:

We have realized that we can assist each other with our indigenous knowledge by sharing information and through group work to enhance our access to marketing and processing techniques (1W).

Women perceived that IK systems used in AF practices are diverse because not all women participate in food crop production. Some women farmers are focusing on small livestock, particularly poultry and goat production. Thus, women participants articulated that IK is more relevant in seed protection, seed preservation, fertilizer application, planting, and weeding.

Training opportunities for women in new technology must enhance their IK decision-making and utilize the applicable technologies to improve their technical skills (Shange 2014). This study considered socialization a source of informal learning to acquire the required knowledge.

Therefore, it would be appropriate for this study to refer to IK as socialization that farmers acquire and employ as they progress with their farming activities and contribute to their knowledge (Zepke and Leach 2002).

Subsequently, IK enabled women to implement their substantial experience without considering scientific knowledge (Kenalemang and Kaya 2012). IK is common in African countries, including South Africa and Zimbabwe, where subsistence farming is prevalent.

The study in Zimbabwe revealed that women could identify wild fruit trees that produce fewer fruits during the poor rainy season.

The study aimed to investigate women's IK on the impact of season on wild fruit trees (Mapara 2009). Further, the study revealed that women farmers mostly used IK for AF practice purposes to grow food crops for their family livelihoods (Mapara 2009).

It has been realised that women used IK in planting cereal crops such as pumpkins, beans, groundnuts, and maize, preferably combining them in one plot for domestic consumption. Therefore, IK is perceived as a holistic approach that composes physical and spiritual life characteristics that make it appropriate and applicable for women's participation in development (Dei 2002). Thus, IK has the potential to contribute to worldwide information vastly.

Non-formal learning is described as programmes carried out in the field, but benefit from planning an extension agent, service provider, or instructor. The study seeks to find out how women learn about decisions in AF using non-formal learning systems. Non-formal learning plays a vital role in offering women knowledge and skills to participate in decision-making in AF activities.

Women farmers in African developing countries, including South Africa, employ diverse strategies to participate in non-formal learning programmes. This chapter discusses different types of non-formal education, including extension services, observations, workshops, demonstrations, and peer-to-peer, field days, and mass media.

An extension transfers information and technology to individuals or groups to achieve the anticipated objectives (Pazvakavambwa and Hakutangwi 2006).

In this case, an extension will be used for agroforestry to transfer AF information and technology to women farmers practicing AF to enhance their AF production.

Usually, Government Extension Officers provide agriculture extension services or service provider agencies to local farmers for crop production and marketing (Pazvakavambwa and Hakutangwi 2006). Studies on women and agricultural extension services, particularly for women, require women farmers, availability, prevailing challenges, and sources of AF knowledge (Ayoade 2012).

Extension education is a non-formal learning technique used by institutions or organizations to cascade information in an advisory capacity to improve knowledge, perceptions, and skills (Ayoade 2012). In most cases, the term 'extension' reflects the development in a rural community, particularly in agricultural projects (Farm Radio International 2010).

This is what one woman said:

Wow..if we can be provided with a very dedicated extension officer in this area, we can be very much pleased because food crop production can improve and we can adopt suitable AF systems that can provide us with modernized AF practices methods (3W).

The majority (95%) of women participants agreed that they lacked access to any training without extension services in Umvoti. Extension service is an individual process and personal contact with the extension service provider to improve the relationship between extension agents and individual farmers (Mudukuti and Miller 2002).

Although group discussion methods enabled extension agents to reach a more considerable number of women farmers in one place simultaneously, the personal influence of the extension agent is of critical importance to assist women farmers in decision-making and participation in AF activities. Furthermore, to progress in their farming venture, they require AF knowledge, which should provide extension services (Kujeke 1998).

It is the government service's responsibility to offer farmers the required AF knowledge and skills (Umeta et al. 2011). Studies in African countries reflected that inadequate financial support contributes to the lack of extension services (Hanyani-Mlambo 2000). There is a perception that male farmers have greater access to AF extension services than women farmers do (Apusigah 2009).

Further studies in Central Africa on women farmers' AF knowledge requirements and availability showed that the advanced knowledge required is fertilizer applications and access to new AF technologies (Okwu and Umoru 2009). Therefore, the necessity to capacitate women farmers in soil fertility, irrigation, soil erosion, pesticides, and business management was identified as a very critical aspect.

Rural women farmers lack access to AF production and the marketing of their products, and socio-cultural conditions restrict their accessibility to new AF technologies (Mashavave et al. 2013). Considerable, rural women farmers lack the necessary technical knowledge to equip them with the ability to recognize the utilization of input in their areas for maximum production output.

Apusigah (2009) affirms that African women farmers participate in AF activities despite the lack of necessary extension services to provide technical support to improve their AF products. However, the fact that the significant challenges that limit women's access and the use of extension services are high prices of technology, inputs that are not readily available, lack of cognizance on technology appraisal, and the prejudice of extension agents against advancing women farmers (Adekunle 2013; Umeta et al. 2011).

There is an assumption that extension services in Africa are limited and are inclined to accommodate the requirements of male farmers more than female farmers (Oywaya-Nkurumwa 2012). Extension agents ignore women's needs about AF activities because farming is preserved for men entitled to land ownership in the African perspective.

The study revealed that in many studies in African countries, where women expect extension officers to provide AF support to manage their changing responsibilities effectively and diversify women's livelihoods for improved household food security and income generation, women farmers are ignored (Banmeke and Olowu 2005). It is assumed that the lack of extension services is not related to the biases of extension agents but was due to financial constraints (Okwu and Umoru 2009).

Like in all African countries, including South Africa, the current challenging economic circumstances attribute the lack of financial support both to the government and to agricultural extension officials (Adekunle 2013; Umeta et al. 2011).

Chingarande (2008) affirms that it is the responsibility of the state and service providers to facilitate financial support for training and education to capacitate women farmers with the knowledge, which will enable them to produce outputs of excellent quality, which will allow them to contribute to the country's economic system.

Extension education has been offered non-formally through the media for centuries. In the Benue States, the study revealed that women farmers recognized mass media as their primary source of AF knowledge (Okwu and Umori 2009; Rao 2015). Agricultural extension in India and Nigeria has been long practiced and it is regarded as the oldest information dissemination technology.

Literature reflects that there is no complete form of extension, however, the crux of the matter is that agriculture forms the foundation of the rural economy, whereby agricultural extension is perceived as the most commonly used mode of agricultural information dissemination relevant to the rural population (Adegboye, Oyinbo and Owalabi 2013).

Agricultural extension is considered a favourable mode of agricultural information dissemination in countries still developing (Adegboye, Oyinbo and Owalabi 2013). Although the study focused on participation in decision-making in AF practices, it has been realized that new technology and knowledge are required for women farmers to sustain their family livelihoods. Extension services provide alternative features to support women's livelihoods through women's organizations.

The benefits of women farmers through extension services are that women's socio-economic conditions are improved, and it contributes to the growth of women's capabilities to be responsible for their forthcoming development.

One participant said:

Hmm...lack of these extension services in this area has a negative impact on us as women, because lack of information on new technology and knowledge on learning new skills, acquiring knowledge and other AF practices, that can improve our farming and productive activities. Our participation in decision-making in AF decision-making is restricted by a lack of knowledge (7W).

Women participants (56%) agreed that extension services from the government were minimal, and even though other agents provided extension services in the area, they only catered to their clients. The absence or lack of extension services hindered women's empowerment and competence in AF decision-making.

Extension services enhance knowledge that contributes to improving women farmers' participation in decision-making to improve their standard level of living (FAO 2007). Women farmers in rural areas mainly depend on AF practices to sustain their family livelihoods.

Agroforestry knowledge enhances the women farmers' participation in decision-making based on the pedagogical model, which can be achieved through existing information and communications expertise (Florence, Mueller, and Zhu 2017).

Thus, this can facilitate the direct dissemination of information from extension agents to women farmers.

Florence et al. (2017) affirm that the extension service's role is to enable women, and farmers, to offer well-organised, industrious, and maintainable land use by providing advice, information, training, and education. Therefore, extension services are an essential mode of information dissemination, enhancing women's social and economic growth. Women farmers in rural areas require diverse information to adapt to new AF technologies.

Women participants expressed their firm belief that the extension enabled them to fully participate and make an informed decision about AF practices and management. Women's current AF practices can transform from their existing traditional methods to new techniques of AF practices if they can be exposed to extension services, where they can access information in AF practices (Danso-Abbeam, Sedem-Ehiakpor, and Aidoo 2018).

Women in rural areas still lack extension services and training programmes. Therefore, there is a dire need for extension officials to provide these services to the rural community, as they are always neglected when it comes to the provision of relevant information regarding AF knowledge (Danso-Abbeam et al. 2018).

The creation of adequate job opportunities will contribute to poverty eradication and increase levels of food security in rural areas.

Thus, governments should create a conducive environment for women farmers through the introduction of incentives that will encourage the involvement of women in decision-making in AF practices (World Bank 2010; Asfaw et al. 2012).

AF extension services are significant to rural women because they offer information that enables women to improve their living standards, contribute to development programs' success, and enhance productivity.

The study in Ethiopia revealed that women farmers were not happy about the extension agents, since they claimed that they were anti- women's development (Umata et al. 2011). The strategy employed by women farmers to request visits from extension agents were perceived to be unnecessary. In African culture and tradition, women are prohibited from seeking knowledge through self-directed learning approaches from male agents (Chingarande 2008).

Traditionally, in African culture, women are expected to bow and be submissive to men and avoid being self-directed to initiate informal learning (Apusigah 2009). However, as soon as gender became aware of their social and political context, they became empowered and transformed their world (Merriam 2001). Freire's strategy for adult literacy education in Brazil was known as "Metodo Paulo Freire."

The Freirean approach principally argued that educators and learners should learn through discussion (Freire 1973). This method assisted him to achieve his political and philosophical aims, based on conscientization.

It is based on the argument that development in the learner's critical understanding of society, results in awareness of their capacity to change society. Therefore, it is crucial to reflect that development programmes should also reflect elements of consciousness such as skills, ability, freedom, and willingness.

This study sought to find out if the situation is still the same amongst my sample of participants. The literature reflected that women who practiced woman-to-woman learning, have improved their production and performances. Complete woman-to-woman learning offers a conducive environment to enhance women's assurance of informed decision-making in AF (Sharaunga et al. 2015).

Observational learning is the process of learning by watching the individual's or group's behaviours (Shange 2014). The knowledge acquired through observation is usually referred to as empirical knowledge. The behaviour of the targeted subject is watched, retained, memorized, and then mimicked. In this case, women of Umvoti would observe the behaviour of other women, retain the information and replicate the behaviour at a later stage.

This is what one participant said:

Agroforestry in Umvoti is not familiar and women just work on their plots to produce food crops. It is very difficult to learn from each other through observation because we all use our indigenous knowledge. However, we in our women's group always wish to visit other women in other municipalities to observe what they are doing and how can we improve on our methods, but due to the lack of extension services, we are failing to get assistance to observe what other women are doing and improve our AF practices (16W).

Based on Kolb's experiential learning cycle reflective of observation, women would observe how other women performed in their respective projects and applied what they had observed as part of their new experiences. Reflection in this study is referred to as the analytic process through which women acquire knowledge from their experience, capture their experience, and view and evaluate it (Jordi 2010).

Observational learning enables women to reflect on their experiences. However, in this stage, women farmers would deliberate on experiences, digesting and understanding what they observed from their field visits and engage in discussions with their peers.

If they observed how adequate weeding or land preparation was conducted, women farmers would realize achieving a clean and weed-free field (McLeod 2013). In reflective observation learning, women would reckon imbalances between their experience and apprehension.

A workshop is described as a deliberately well-prepared educational seminar planned by facilitators to pass on knowledge to participants (Jordi 2010). The workshop is regarded as a non-formal learning strategy employed to capacitate farmers with AF knowledge.

From an agricultural perspective, qualified agricultural extension agents generally organize workshops. The workshops' objectives are to provide farmers with agricultural knowledge about AF practices. In this case, it would be women farmers, because the study investigates how women learn about AF decisions.

One of them said,

Hey...since we have attended these women's workshops on AF practices we realised that they are a fruitful means of teaching and imparting knowledge to us and provided us with hands-on skills. We have managed to access a lot of valuable information about women's participation and what is required from women to be to participate in decision-making in AF practices(7W).

The participants acknowledged the workshops as informative learning and training modes. They confirmed that they appreciated the workshops because they were interactive and the information, they got was accurate; hence, it was from qualified experts. In the African context, in countries such as Zimbabwe, Tanzania, and Kenya workshops are a preferable source of AF knowledge for women farmers.

The availability of extension officers would enable them to facilitate workshops for women and capacitate women on AF practices. However, it has been realized that gender-sensitivity facilitators are required (Mudukuti and Miller 2002). The presence of farm field schools (FFS) to offer extension education to women farmers, employing different learning techniques such as participatory, interactive, and non-formal group-based learning, is recommended. However, these approaches are lacking in South Africa, and that poses a gap in extension service.

The demonstration plots are described as planned and arranged land sites that are set aside for information dissemination and motivate women, and farmers, to observe, experience, experiment with, and conform to new and advanced opinions, practices, and technologies that can enhance and augment farms outputs and financial gain (Hasan 2017).

Women farmers, a source of AF knowledge (Hasan 2017) identified demonstration plots, service providers such as the seed/seedlings companies that supply vegetable seedlings, fruit trees seedling and cash crop seedlings and livestock breeders, companies that supply fertilizers and weed and herbicides companies.

Women farmers were gathered on a set date and venue to carry out demonstrations. Government departments such as the Department of Agriculture, Forestry and Fisheries and Department of Agriculture, Land Reform, and Rural Development were responsible for identifying demonstration sites and transportation of farmers (Hasan 2017).

During the demonstration day, different service providers, which succeeded by interacting through discussions made presentations, where each woman was requested to participate in activities that were part of the demonstration.

One of them said,

Uhhh.. demonstrations are very crucial and the most preferred mode of education because that is where we got the most practical skills for land preparation, weeding techniques and fertilizer application. Demonstrations enabled us to generate and deeper understanding of the ways and mean to learn about decisions in AF practices. We have learned a lot about how to plant different crops and the best season for manure application (3W).

Women participants (78%) agreed that demonstrations intensified their intellectual skills and by participating in demonstration exercises they addressed their specific requirements and aspirations. In this premise, women participants echoed demonstrations as an appropriate mode, offering them an opportunity to present their opinions and views on matters being demonstrated and discussed.

Women's confidence in presenting themselves and their listening skills were improved. Based on the demonstration exercise conducted by different service providers, it was apparent that the private sector had excelled in offering the required education and training to women farmers.

The demonstration is the most effective learning technique, primarily where rural people rely on hearing the verbal presentation observing and touching what is demonstrated. Women portrayed their knowledge by reflecting on their experiences. Demonstrations and demonstration plots are significant to women farmers because they are practical activities (Rudebjer et al. 2001). However, this requires women's practical skills to apply their knowledge theoretically.

The elimination of inequalities and lack of access to significant resources such as land, credits, and advisory services to women, can serve as the best examples of learning about AF decisions (Rudebjer et al. 2001).

Farmers Farm Services (FFS) concentrates on capacitating women farmers on their production analyses, identifying their problems, testing the achievable resolutions, and adopting practices that might be the most appropriate to their AF practices (Rudebjer et al. 2001).

The study in rural areas investigating FFS as participatory group-based learning reveals that this positively affects women farmers (Duveskog et al. 2011). Consequently, both men and women appreciated the growth of the household economy and the transformation in customs, traditions, and the functions of women. The transformation of women farmers' attitudes was realized, and they began to work collectively as a family for the benefit of their households.

Field days are regarded as non-formal learning programmes relevant for women farmers. This form of education is organized by extension officials, and service providers and is carried out in the field without the classroom setup (Duveskog et al. 2011). Field days are an effective learning process because women farmers obtain agricultural knowledge through direct observations, authentic information from different experts' presentations, and walkabouts in the field.

One of them said:

Even though private forestry companies provide field days to their farmers, we benefit because we are one community, and we all join the field days and participate in the practical work and workshops (6W).

Women participants (30%) contested that significantly few field days were successful because most farmers were not aligned with private companies; therefore, most farmers were discriminated against and were never invited to the field days.

The success of those field days could partially be attributed to the fact that it was organized by the male farmer and carried out on his farm. Private extension agents are responsible for identifying AF activities to be showcased on the day (Ajani and Igbokwe 2011).

Other service providers who attended the field day, prized those who entered the best AF project competition. It was realized that field days could improve women farmers' self-esteem by acquiring confidence in their AF activities by observing accurate farming techniques. Thus, this can be attributed to responses to their questions and their awards.

Sadly, there is a concern that extension services in Africa are decreasing because of a lack of resources to provide education and training to farmers (Adekunle 2013). However, in Nigeria, the University of Calabar supports women farmers groups by providing non-formal education to improve their organic fertilizers quality (Biao et al. 2011). Field days became the famous and flourishing non-formal strategy for acquiring knowledge on farming.

Peer-to-peer learning (women learning circles) is regarded as another form of informal learning employed by women farmers (Magnan 2015). Women have frequently been observed to have limited ability to make critical strategic choices; this is evident where women spent extra hours and days in AF practices, especially in the growing of crops and household chores. Women farmers lack adequate knowledge, that will enable them to participate in decision-making on AF practices (Magnan 2015).

One participant said:

Previously, we were working in silos in the plots of land we inherited from our husbands or fathers. However, after we started with our women's group meetings, we realized that we are lacking much knowledge. We decided to visit each other's projects to see how they performed their activities. However, this assisted us because we acquired much knowledge we are now employing in our projects. Peer-to-peer learning enabled us to reflect on what we have seen from other women, motivated us to share our opinions, views, and perceptions, and enhanced our communication (8W).

Woman-to-woman learning is an essential tool for social development to determine society's learning to advance their ability as a group or individuals across the ages through their involvement in the peer-to-peer learning process (Fitzgerald 2017). This technique inspires women to engage in-group learning to achieve the anticipated objectives of being capacitated and developed, sustaining their livelihoods and improving their quality of life. This enabled women to participate in informed decision-making processes in AF practices.

Women participants acknowledged that working together as a woman-to-woman group has contributed significantly to their achievements than those working individually. They confirmed that a broader collection of skills, knowledge, and experience that they have applied to practical activities sharing and discussing ideas played a pivotal role in deepening their understanding of the decision-making processes in AF practices (Fitzgerald 2017)

Women participants confirmed that skills development as part of peer-to-peer working groups contributed to developing their interpersonal skills by improving listening, observation, and decision-making skills.

Peer-to-peer learning remains progressively receiving consideration in the learning arenas because this learning technique has various profits for an individual woman (Houldsworth and Mathews 2000).

However, in other countries, such as the UK and other parts of the world, it has been realized that peer-to-peer education has become an essential mechanism for those who do not have the form of education and those who lack education (Fitzgerald 2017). This study explores how women learn about agroforestry decisions, considering their feelings and experiences on group work and assessment.

The study, at the University of Wolverhampton exploring the feelings and women's experience about collective work and group assessment in Higher Education (HE), revealed that peer-to-peer was a method that meaningfully improved the knowledge acquired through group discussions, conceptions, and appraisal of other women's ideas (Houldsworth and Mathews 2000).

The study at the University of Wolverhampton confirmed that a minimal number of women in Indiana are exposed to learning about AF practices (American Farming Trust 2016; Houldsworth and Mathews 2000). Alternatively, the study in Kenya revealed that small-scale farmers depended on their farm colleagues and community-based organizations (CBOs) for AF information (Rees et al. 2000). In most African countries, it has been observed that women are expected to give respect to their male counterparts (Chingarande 2009).

This is also common in African countries' traditions, particularly in Zimbabwe, Kenya, and Tanzania.

This study sought to explore the extent of women's participation in decision-making and how they learn about AF decisions; thus, using various learning techniques such as peer-to-peer and other approaches in their pursuit of farming knowledge.

Various studies conducted in most African countries showed that women had reflected greater self-determination. Thus, this enabled women to generate the required information from relevant sources. In Umvoti, it was observed that women farmers, accessed learning informally, like in other African countries like Kenya, Nigeria, and Zimbabwe continuously, based on their requirements (Mutopo 2012).

A women's group is a collective number of women working together and having regular meetings to deliberate and share their anticipated objectives (Okwu and Umoru 2009). Women's groups provide a conducive, supportive environment that encourages and accepts honesty.

Women group discussion is a process that assists women farmers in realizing that they can share information and knowledge with other women farmers. Women's group learning portrays the potential of addressing women's inequality in the AF economy and employment.

In most cases, in rural areas, women farmers have been proven to be illiterate or have no form of education and receive less remuneration in AF work when compared to their male counterparts. Group learning enables women to learn collectively through observation and physical participation in AF projects (Fickel et al. 2018). This is what one participant had to say:

In the initial stages of attending women's group discussion networking meetings, I was not expecting much. However, when I ventured into AF projects, I expected advice on enhancing my AF production. I pictured women's networking groups as a better marketing instrument for my AF practices and decision-making involvement (3W).

Women participants (60%) agreed that they had participated in women's discussion group networking. They acknowledged that this form of learning through women's networking groups offered them a mechanism to share information about their success and to obtain advice to address challenges about their participation in decision-making (Fickel, Abbiss, Brown and Astall 2018).

Group learning can capacitate women farmers and enhance individuals' knowledge, understanding, skills, and participation in community-related matters (Fickel et al. 2018).

Hicks (2020) affirms that women's groups provide different secure circumstances regarding their experiences and challenges. The study in Venedik aimed at introducing the empowerment of women farmers with Agricultural Business Management Training revealing that women farmers supplemented their knowledge through closer cooperation with other women with whom they had a working relationship and trust (Ozkan, Brumfield, and Vezne 2016).

The study revealed that women who engaged in group learning environments obtained similar benefits to men. The study speculated that these groups learning networks enabled women to improve their information sharing, and they learnt about the constraints that they were experiencing (Ozkan et al. 2016).

Women were drawn to networking groups because they offered something that women could not obtain from other working environments.

Mass media is considered the crucial form of non-formal learning technique for women farmers in AF. There are no extension agents in rural areas, and the community has no access to education facilities. The majority, particularly girls and women, have no education or minimum education levels. Mass media is a basic model of education to impart knowledge to women farmers (Ozkan et al. 2016).

One participant said,

Wow..., in the morning before I go to the gardens, I use to listen to the programmes called “Phez’ukomkhono” which are Ukhozi FM programmes advising farmers about all agricultural activities and motivating them to embark on farming. The programmes use to invite service providers and government officials to make presentations on issues pertaining to AF practices (9W).

Women participants (70%) confirmed that the use of mass media such as radios was helpful to them to acquire knowledge because they could take the radios with them to the field and listen to the programmes while working in the field. The use of local radio stations was also helpful to women farmers. However, their concern was that those radio stations only covered local petty issues, while other sources like commercial radios covered the broader areas of success stories on AF.

Literature has reflected that education has been provided through extension services by extension agents, but this was insufficient because extension agents were not available to assist women. In the study conducted in the Benue States, Okwu and Umori (2009) observed that women farmers preferred mass media as their primary source of AF information.

This confirms that radio as a source of information plays a vital role for women farmers to acquire relevant knowledge for their AF activities. The utilization of radio as a suitable mode of information dissemination and communication was extensively considered because of the wide range of coverage, availability, and affordability.

Formal Agricultural and Forestry training in South Africa is an obligation of agricultural institutions that provide agriculture training at secondary and tertiary stages. Formal learning is the planned, structured, and organized learning technique, usually organized by institutions and characterized by certification ceremonies (Schugurensk 2000). One college in the Eastern Cape Province provides forestry training and one Technikon in the Western Cape.

Formal learning is relevant to women farmers who have attended agricultural education, but irrelevant to this study because women farmers have low levels of education, and some women farmers have no form of education. They still rely on non-formal and informal education, which have been discussed under non-formal and informal learning.

One woman had this to say,

Mmm...I have never received any form of training in AF practices, therefore, I am still using traditional methods which I learned from my parents. Further, the knowledge and experience I have in making decisions in AF practices I gained from various interventions, such as working on commercial farms and when I was working on my parent's land. The lack of training contributes to our low levels of education and adversely affects our capabilities to participate in decision-making processes that enable us to learn how to make decisions in AF practices (12W).

Women participants confirmed that they had never acquired any training about AF practices. The knowledge was based on their non-formal and informal training (Akullo and Malumba 2016). They reflected that if they were given an opportunity for education, they would have performed better in the field of AF and be able to participate in decision-making processes.

Generally, in sub-Saharan African countries, women carry out their AF practices manually because of the lack of appropriate knowledge and technology support in their households and processing facilities (Akullo and Malumba 2016). A study in Burkina Faso revealed that women spent three to four days preparing fermented seeds of *Pinus biglobasa*, while extracting shea nut butter. That kind of exercise proved to be physically strenuous and time-consuming. (FAO 2012).

This proved beyond doubt that it was a great necessity to provide women with the required technologies to enhance their food crop production (FAO 2012).

Women participants raised a concern that, if they could be equipped with new technical knowledge, their usage of animal traction could decrease the demand for women's labour force (FAO 2012).

Thus, it is believed that the use of manual ploughing and weeding, which are women's responsibilities, can be completed much faster and easier than what is currently taken care of.

Formal learning and its sources were deemed unsuitable for women farmers to acquire knowledge in AF decision-making, hence, participants indicated that they had never been exposed to any form of education and training.

However, regarding other forms of training, the participants reflected that they had never been exposed to any formally accredited workshops that would award them certification. However, this was due to a lack of extension services and perhaps financial support.

During individual interviews, the study concluded that informal education offers individuals an opportunity to learn to be active participants in household and community decision-making situations (Ainsworth and Eaton 2010). However, this is a normal learning process collectively and cooperatively; individuals who participate in it acquire knowledge at any given time as they receive assistance from each other.

The participants identified two informal learning sub-themes, which were crucial to them to acquire the required knowledge in AF decision-making. Self-directed learning and indigenous knowledge were discussed and analysed. Women participants in an individual interview testified that:

When I grew up as a young girl in my household, I was not afforded formal education opportunities. Still, my mother kept me at home and provided me with traditional education. As a result, I was taught about our family's cultural morals, beliefs, and standards based on the household's background, supported by succeeding collective groups (1W).

This form of learning is frequently interrelated with the household environment, and it is recognized as the groundwork of all consequent educational backgrounds (Cherry 2020). Household education aims at creating awareness of women and young girls based on norms, morals, and opinions in households' ethical views.

Women participants confirmed that they were constrained to access formal education at their early stages, but as they grew up being involved in agricultural activities within their households, they used informal learning to acquire knowledge.

Women generated all the knowledge and experience through informal learning (Kim, Collins, Hagedorn, Williamson, and Chapman 2004). Women used the knowledge they gained from their parents during their childhood or social structures when assuming their roles and responsibilities in AF activities.

The participants confirmed that they traditionally learned and transformed it into their experiences, where they demonstrated that this learning process transpired through social learning processes at the necessary destination (Kim et al. 2004). The literature revealed that the information from different studies showed that 70% of women learned about decisions in AF practice through informal learning.

The degree to which women learn about decisions in AF, is high in terms of female-headed households (FHHs), compared to their male counterparts in technologies, but low as measured by the area they were allocated to these activities and the number of trees they plant (Peterman, Behrman and Quisumbing 2010). This comprises women's participation in soil fertility management, fodder production, and the establishment of woodlots.

The Beijing Platform for Action (BPA) recognized women equivalence as an essential issue for poverty eradication, and further permitted women mainstreaming to eradicate poverty (United Nations 2004) effectively. The Beijing Platform for Action moved forward by proposing movements to implement these strategic objectives to enable the United Nations to facilitate this process.

These strategic objectives consider adding the amendment, recognition, and protection of macroeconomic policies (United Nations 2004). The improvement of strategies was recognized to address the necessities and purposes of women in poverty alleviation. It resulted in the women studying laws and decision-making practices to ensure egalitarianism and access to financial facilities and resources.

One woman said:

Uhhh.....as a woman from a rural poor community, I did not get an opportunity to attend school because I have learned about decisions in AF through various means such as attending Agriculture and Forestry field days in the area, participating in demonstrations plots where other women are practicing AF with the support from government and attending workshops (5W).

The majority (80%) of women participants agreed that their education levels were deficient because they were denied opportunities to attend schools up to the tertiary levels (Sharaunga, Mudhara and Bogale 2015). The women confirmed that traditionally, they continued to be subjected to numerous noxious cultural, traditional, and religious practices in all communities.

It has been realized that these practices hinder their access to their rights and subject them to vulnerability as they are compelled to submit to tribal authorities, who are against women's rights (Sharaunga et al. 2015). Women participants acknowledged that through self-directed techniques they developed excellent knowledge that they could share during their women's gardens projects meetings.

Women farmers' empowerment in AF is critically essential in reducing vulnerability to food insecurity among the rural community of Msinga in KwaZulu Natal. The study conducted in Msinga municipality under the UMzinyathi District municipality demonstrated a high rate of an impoverished rural communities in traditional areas.

The study revealed that in women empowerment in Msinga, socio-cultural aspects created hindrances in AF to reduce the probability of vulnerability of women's households in food security (Sharaunga et al. 2015).

The introduction of extension services would assist women to participate in the AF project with all education techniques involved and enhance woman-to-woman learning and contribute to food security programmes that would alleviate poverty and hunger (Sharaunga et al. 2015).

Kilpatrick and Johns (2003) analyzed how women farmers learnt about decisions in AF in Australia, employing a different informal source of self-directed learning.

They realised that self-directed learning sources were famous for acquiring technical skills. The grading of self-directed learning from the consultant and experts' points of view discovered that self-directed learning scored 58% of women farmers.

One of the participants said,

Mmm.....I only attended school from the first year to standard one, and my parents decided to remove me from school because they thought educating a girl child was a waste of time because they left home and got married, therefore, the knowledge and experience I have in AF is based on my indigenous knowledge (7W).

The participants confirmed that they lacked education, hence they were unable to actively participate in AF decision-making processes. They further, alluded that what they were practicing in AF is through the indigenous knowledge (IK) acquired from their elders. However, their elders cascaded this knowledge to them and to society to sustain their household livelihoods.

Women, with the little knowledge they had, were able to contribute to the decision-making processes in the development programmes (Tella 2007). Women farmers used indigenous knowledge as part of their informal learning process in all AF activities to achieve anticipated objectives.

In the absence of modern technology, women in rural areas use their indigenous knowledge for their rural subsistence AF practices (Schugurensky 2000; FAO 2012). Indigenous knowledge enables women farmers to continue and alleviate climate change with terrible effects. Women farmers who acknowledged IK confirmed that they had used it effectively and efficiently to produce food crops and livestock.

Women's use of IK has brought ideas of utilizing this system as an essential supply of knowledge, which augment rural community involvement in the growth process (Shange 2014). In this premise, this study ropes the incorporation of skills and IK in the development process. The study suggests that a highly comprehensive understanding of rural community culture and its history should be essential to increase women's effective growth.

Makinde and Shorunke (2013) affirm that adults tend to reflect on their previous experiences and make decisions to develop current knowledge based on their previous experiences. From an African perspective, societies employed the developed IK to be implemented daily for their livelihoods. Thus, IK as an educational system plays a vital role, particularly in poor rural communities' lives; hence, it is affordable, promptly accessible, and sustainable (Zepke and Leach 2002).

IK has a prominent learning method primarily used in African countries for AF purposes. Women have a vast knowledge of various AF cultural phenomena, including different indigenous plants and small livestock management, which form part of their domestic households (Kenalemang and Kaya 2012).

A study in Botswana investigating how women used IK to generate income, reveals that women used their IK for marketing their AF products and other existing resources such as hand-craft and other activities (Makinde and Shorunke 2013). This enabled women to buy small items such as sugar, salt, fat, and other medical requirements to supplement food crops that they produced from their small plots.

Studies on how women learnt about decisions in AF, in African countries, revealed that women used their IK to continuously interact, communicate and share their experiences with other women on matters about food crop production and marketing strategies to generate income to sustain their households (Kenalemang and Kaya 2012). This enabled women to decide on lessons that determine their future decision-making.

Non-formal learning is a process of learning that occurs in external formal learning situations, but inside the structure (Ainsworth and Eaton 2010). This kind of learning originates from the learner's self-conscious decision to maestro a specific activity, skill, or cognition. Women participants identified extension services, observations, workshops, demonstrations, field days, peer-to-peer learning, group learning, and mass media as essential sub-themes that can enable them to acquire relevant knowledge on decision-making processes in AF.

Extension services are an information-sharing platform where the service provider transfers information to farmers and responds to the extension agent (Ayoade 2012). Thus, sharing information is from the service provider to the farmers and from farmers to the service provider. This enabled women farmers to make informed decisions about AF practices and participation in decision-making.

Another participant said:

Uhhh...I am interested in AF and I have access to land which I inherited from my late husband, I am practicing AF as an individual, using my indigenous knowledge to practice AF in home garden projects, but I have realised that I am not doing well because of lack of knowledge in AF, the lack of extension services is a constraint because that contributes lack to credit facilities and access to market for our AF product (1W).

The majority (68%) of women participants confirmed that they required the assistance of extension officers to improve their AF. The lack of extension education contributes to women's frustrations related to their lack of knowledge in AF (Kolb and Kolb 2017). Women participants confirmed that they usually had their meetings for information sharing, but that was inadequate and indigenous knowledge from other women who had been in AF practices for a long time still could not suffice.

The participants confirmed that they shared information among themselves as a women's group, and they implemented the information based on experiential learning and local knowledge to decide based on what they had agreed as a women's group (Kolb and Kolb 2017).

Women participants further confirmed that they used their local knowledge to supplement the lack of extension education and extension services, which were the significant contributing factors to the lack of women's participation in decision-making in the AF space.

Extension education is a powerful tool for women farmers because they lack knowledge and experience (Kolb and Kolb 2017).

The extension has the potential of cognitive ability to reflect, develop new ideas, and accomplish constructive achievement. Women confirmed that they would have generated the practical experience required to develop their skills and concepts through extension learning.

The extension technique is helpful for extension officials, where they meet with individual women farmers in their households or practice AF to deliberate on matters of interest, providing women farmers with information and guidance (Christoplos 2010).

This platform offers a very informal and relaxed atmosphere to women farmers and enables women an advantage to benefit from the extension official's consideration. As a result, women in rural areas have played a significant role in rural development (UN Women 2013).

The involvement of women in accomplishing transformation in economic and social transformation required for sustainable growth, such as food production and the labour force was observed to be their strength. However, government institutions should involve women in access to education, health, and credit facilities. UN Women (2013) strongly believe that women's empowerment is necessary for their well-being.

Consequently, rural women needed to determine policies, laws, and development programmes on the entire substances impacting their daily lives (FAO 2012). However, this is achieved by using extension services, regarded as informal education that is focused on rural poor communities.

The participants confirmed that practicing AF in rural areas is unsatisfactory because they have no access to extension services to get a professional extension service provider to guide and train them in making decisions in AF practices.

An extension is described as a dynamic concept that continually transforms a process focusing on rural areas, and provides AF information and guidance to assist the rural community in solving their problems (FAO 2012). The use of extension services enabled women to enhance the efficiency of their AF practices through food crop production and improved their living standards. Extension services provide technical advice through informal learning to the poor rural community.

Extension services serve to disseminate information related to AF practices, and guidance to support rural communities, particularly women involved in AF practices, to solve their AF-related problems (UN Women 2013). This service improves women farmers' AF productivity and enhances food security, and rural community livelihoods through income generation and poverty alleviation. This study observed that extension services in Umvoti are lacking.

It is critically required to transfer knowledge and skills to women farmers. Extension services were also needed for women's organisations and inspiration, skills and knowledge transfer, technical advice and information, and confidence to embrace all activities (Christoplos 2010).

The lack of extension services and the dissemination of agroforestry information to poor rural female farmers constrain women farmers from participating in AF decision-making and it hinders their ability to adopt new technologies.

The participants raised their serious concern that multifaceted legal, customary, and social norms constrained land access. Extension services were intended for those farmers who had access to land, to which women were denied access in terms of land and land rights (Meinzen-Dick, Quisumbing, Behrman, Biermayr-Jenzano, Wilde, Noordeloos, Ragasa, and Beintema 2010). Gender discrimination in land ownership significantly influences women's access to extension services.

In rural areas, women farmers who have access to land have tiny plots which are of poor quality (Meinzen-Dick et al. 2010; FAO 2011). Women's access to land and land ownership constraints women's suitability to access productive resources, such as credit facilities, which permit women farmers to access the information they require. Insufficient knowledge of AF practices contributes to the low production of AF products.

Factors such as the low levels of usage of modern inputs, the reduction of soil organic material, soil erosion, and high rainfall-dependent AF systems, are the main problems in sustaining AF production in rural areas (Dula 2018). However, without advice from extension officials, women farmers could not contribute to decision-making regarding those AF activities.

Agricultural extension support would be the only way to combat poverty and improve the productivity, profitability, and sustainability of poor rural women AF practices in rural areas (World Development Report (WDR) (2008).

However, AF practice positively influences the improvement of food security through the development and dissemination of new AF technologies.

Therefore, women's involvement in AF decision-making supported by extension services can enhance rural women's livelihoods (World Bank 2010; Asfaw, Shiferaw, Stowe, and Lipper 2012).

The study in Cameroon revealed that agricultural extension agents were common, whereby women farmers were supposed to acquire their farming knowledge, but unfortunately, women farmers were not receiving that service from extension agents (Oladele 2005).

However, males were receiving a more significant number of self-directed individual visits. Thus, women relied on their self-directed learning process. Although this was uncertain, it is assumed that men typically requested visits from extension agents.

Observation education has the potential of shaping and modelling the subjects, and is primarily familiar to children as they emulate their parent's behaviours, and is relevant to adults who lack education or have no form of education (FAO 2012). This knowledge is based on what people have observed during their practices, field visits, or demonstrations in other women's AF plots or local environments.

Observational learning plays a crucial role in the socialization process, whereby women learn how to behave and respond to others by observing how their peers interact with others.

One woman said,

Ooh..yes..it has been always my wish to visit other women in other municipalities to observe what they are doing and further gathers how I can improve my AF practices (16W).

The participants agreed that observational learning assisted them in learning more about AF decisions because they observed other women practicing operations such as land preparation and other activities. The knowledge that women gained through observational learning, was reflected and repeated in the areas where they practiced their AF (FAO 2012).

Women have substantial knowledge about food crop production and nutritious forest food that improves their households' health (FAO 2012). This has been noted where women used their indigenous knowledge in the absence of modern technologies. Shange (2014), contests that the enhanced contribution of rural women in expansion opportunities remains a constraint in rural communities.

The existing literature on observation questions the assessment of encompassing increased plans about rural people's skills and traditional knowledge (Jordi 2010). Based on the social learning concept of experiential learning cycles, women would reflect on what they had observed from their field visits or their peers during their woman-to-women project visits.

Workshops are when women farmers assemble in a suitable place, to be advised on different aspects concerning AF practices (FAO 2012).

This would be interactive learning whereby practical work would cascade information to farmers. However, this mode of parting knowledge to women farmers frequently provides a suitable situation for women farmers who have not been exposed to AF practices.

One participant stated,

Hey...since I have attended these women's workshops on AF practices I realised that they are fruitful means of teaching and imparting knowledge to us and proved us with a hands-on skills. I have managed to access a lot of valuable information about decision-making in AF practices (7W).

The participants acknowledged that workshops had changed their decision-making lives, hence, they had learned a lot about making informed decisions regarding the crops to be planted, seasons, and types of crops that could be marketed to generate an income. However, workshops serve as excellent support for skills development and skills transfer, particularly for people engaging in everyday practice (Fitzgerald 2017).

Workshops enable women farmers to interact during the practicals and after the workshop (Fitzgerald 2017). Social learning played a significant role in this part of the study under Kolb's experiential learning cycle, where women farmers included an interactive learning stage.

In this case, the study looks at how women participate in decision-making, and how they learn about decisions. Women's experiences reflected the powerful social interaction features involving different women.

In an African context, Ntseane (2011) asserts that community learning, through social interactions, is the most fundamental way; hence, people learn from each other.

This reflects that through women's socialization processes, interaction with each other to their knowledge and experiences in AF is necessary. Women farmers raised tremendous concerns about the lack of extension services in the area; thus, they requested that they would be delighted if extension officers' services should be made available.

The demonstration plots are described as planned and arranged land sites that are set aside to impart the dissemination of information and stimulate farmers to observe, experience, experiment with, and conform to new and advanced opinions, practices, and technologies that can enhance and augment farms outputs and financial gain (Hasan 2017).

Women farmers, a source of AF knowledge (Hasan 2017) identified demonstration plots, service providers such as the seed/seedlings companies that supply vegetable seedlings, fruit trees seedling and cash crop seedlings and livestock breeders, companies that supply fertilizers and weed and herbicides companies.

One woman had this to say:

Uhhh.. demonstrations are very crucial and the most preferred mode of education because that is where we got the most practical skills for land preparation, weeding techniques and fertilizer application. Demonstrations enabled us to generate and deeper understanding of the ways and mean to learn about decisions in AF practices. We have learned a lot about how to plant different crops and the best season for manure application (3W).

Demonstration plots proved to be a potential source of knowledge and experience in the learning domain. The demonstration proved to be effective because it was carried out in the field, and women were physically and mentally involved in the performance of activities (Rudebjer, Taylor, and Del Castillo 2001). Kolb's learning cycle reflects that women achieve substantial knowledge from observation and active experimentation from the demonstration.

FFS can offer a possibility for women farmers to exercise and assess the sustainability of land-use technology. Developing women's traditional technologies would enhance their traditional methods and culture (FAO 2003). The duration of FFS would last about a month to a year, relying on the group's objectives. The responsibility of the extension agent is to facilitate the development of new technologies, and for women farmers to implement or reflect on what they have learned.

Field days are essential for women farmers because they are special days planned for learning through observation, whereby farmers assemble in a specific venue to showcase a progressive farmer or organization (Mashavave et al. 2013). This is classified as group-based interactive learning, potentially exposing women farmers to farming strategies.

This is what one farmer said:

Eish..it was my first time attending the field day and I learnt a lot from this field day, but I wish we could have more field days be organized at least one field day per season so that we learn more and have more knowledge on various AF activities (12W).

Women participant (60%) asserts that although these field days are limited to a few individuals with financial support from forestry companies, particularly cash crop farmers, they could learn more from them. The participants raised a concern that these field days were very few, and they felt that more field days should be organized on a seasonal basis.

It is perceived that as women farmers complain that the field days are insufficient, this attests that field days play a vital role in their farming practices, as they offer women an opportunity to mingle and learn from one another as farmers. Field days are crucial for women farmers who have no education or less knowledge, and who might be uncomfortable with tertiary education (Duveskog et al. 2011).

The participants acknowledged that their knowledge and experience had improved through those field days and they contributed to them gaining more confidence in private agencies, and they pledged their commitment to AF practices. The participants confirmed that before they attended field days, they used to delay their AF operation until the first rains before they commenced with planting.

However, with the knowledge gained from field days, they commenced with land preparation and prepared seed/seedlings and fertilizer before the first rains.

Women's contribution to AF practices has always been ignored and neglected, because of assumptions that they formed part of small- in scale subsistence farming (Staff 2020).

The literature shows that women's role in AF has never transformed in this field of agriculture, even though the change in AF has been experienced in the previous years. The role of women in AF practice is apparent through various success stories from around the country, particularly in India. The study in India reveals that women's knowledge during the field days and workshops motivated them to develop more interest in the agricultural field.

The study cited the cases of two sisters in North India, who abandoned their permanent government jobs to embark on organic farming and convinced the whole village to pursue organic farming. Women farmers were ensured of the availability of a sustainable market (Staff 2020). A woman engineer from South India discontinued her job and embarked on AF to produce healthy and fresh food products through hydroponics projects.

The literature reviewed cited a successful story of a girl who acquired agricultural knowledge from her parents and siblings (sisters). A girl inherited the responsibilities of agricultural farming, where she generated a significant amount of profit to sustain her livelihood (Staff 2020).

Although field days are crucial for imparting knowledge to women farmers, this form of learning is still not applicable to rural women because of the movements that require women farmers' transportation and catering expenses for the guests, and this makes field days expensive (Mashavave et al. 2013).

FFS are recommended for women farmers to impart knowledge, but it is impossible to practice it in Africa (Mashavave et al. 2013). Commercial forestry companies are not interested in field days because they are not promoting any education to farmers.

However, out-grower schemes that promote AF practices use field days to impart knowledge to small-scale farmers with women inclusive (Masuku 2005). Out-grower schemes provide field days to small-scale growers as a non-formal learning strategy to provide farmers with knowledge.

The participants agreed that they had attended field days organized by out-grower schemes in Umvoti Municipality. They confirmed that field days were a practical manner of acquiring critical AF knowledge. They learned suitable farming techniques from progressive farmers with assistance from private forestry companies.

The participants raised a concern that there were no extension officers, who came from the government. That made it very difficult for them to access extension services from the government. It was only those who were aligned with private companies, could access extension services.

One woman said:

When the field day occurs on an individual farm, people assemble to observe and learn how an individual practices it. The extension agent would be available to respond to people's questions. Other women would learn by listening to the extension's responses (11W).

The participants (10%) responded that they learnt about AF decisions during field days when those days were properly organized and arranged by extension officers from the Ministry of Agriculture, Forestry, and Fisheries soon after identifying a female farmer with a well-managed AF project. An appointed panel of project co-coordinators and the extension officer would short-list all participants and select one best female farmer.

During the field day, women farmers would gather at the chosen venue, where there would be opportunities to share information and ideas through responses from other female farmers' questions, as people walked around the venue, which might be the chosen best field.

Although it has been recognized that women farmers lacked access to non-formal learning in other African countries. Extension officials partly provided this form of education through the Ministry of Agriculture and Mechanization in Zimbabwe, and companies provided fertilizer and seeds.

Similarly, in Zimbabwe, the attainment could partially be attributed to the farmer, whose responsibility was to provide the venue on his farm, where the field day would be conducted and to provide catering for all people attending field day, including Government officials from the Ministry of Agriculture and Mechanization, extension officers and service providers (Adekunle 2013).

Women with information and knowledge on AF practices are crucial in reducing asymmetries and women empowerment in agriculture and forestry. Further, it is suggested that women with similar knowledge of AF should be targeted to convey this knowledge for women empowerment purposes (BenYishay and Mobarak 2019).

One woman said,

Previously, I worked in silos or individually in the plots I inherited from my husbands. However, after I started with my women's group meetings, I realized that I am lacking knowledge. I decided to visit each other's projects to see how they performed their activities (13W).

Another participant said,

Eish...., peer-to-peer assisted me because I acquired much knowledge, which I am now employing in my AF projects. Peer-to-peer learning enabled me to reflect on what I have seen from other women, motivated me to share my opinions, views, and perceptions, and enhanced my communication (8W).

The participants (95%) agreed that peer-to-peer was an essential learning process, which provided them with valuable knowledge that contributed to their empowerment in AF decision-making (Blaine 2005). Peer-to-peer learning enabled women to share information and ideas on adapting to new AF technologies.

Thus, this method contributes to women's effective and efficient ways to learn about decisions in AF. Women contested that peer-to-peer demonstrated great potential in imparting the knowledge they used during their group discussions.

Women participants in the study confirmed that peer-to-peer created an additional opportunity to develop the critical knowledge they deserved for the decision-making process and enabled them to learn more about AF practices. Fitzgerald (2017) asserts that peer-to-peer learning is an instrument to capacitate and enhance an individual's knowledge, understanding, skills, and participation in the decision-making processes. The concepts of peer-to-peer permit the dissemination of important information from woman to woman with full support.

The participants affirmed that the lack of effective communication and involvement in group discussion meetings posed massive challenges when they were involved in group discussion meetings. Women's commitment in group discussion meetings is recognized as the supreme progressive instrument that is used to improve the effectiveness of collective work (Houldsworth and Mathews 2000).

The study strengthens the outcomes of previous studies in group work, which signified that the experience was usually optimistic for women. Studies from Third World countries, particularly South Africa, Nigeria, and Cameroon, show that women farmers attain AF information from their peers, husbands, knowledgeable neighbours, and media through the network.

Agroforestry information which is available from these sources is comparatively advanced (Yusuf et al. 2013). In Senegal, the study revealed that women farmers in poor rural areas and older women who had been practicing farming for years had vast knowledge of farming, and they were a vital source of information (Okwu and Umoru 2009; Diouf et al. 2000).

The government extension officers were not a favoured source of information; thus, farmers distrusted government extension officers because of their immature status and formal education. Women farmers asserted that government extension officers lacked an understanding of the farmers' culture, and they were so manipulative that they wanted to modify their values (Diouf et al. 2000).

On the contrary, the study in Zimbabwe carried out, which was out in the Mazoe area reflected that the extension officers' services were significantly required (Diouf et al. 2000; Matondi 2012). The study further revealed that women farmers attained AF information and skills through the use of different methods such as listening to the extension agents or women farmers, observing the demonstration by neighbours on what was happening and reflecting on what they had observed (Okwu and Umoru 2009).

Women's group learning portrays the potential of addressing women's inequality in the AF economy and employment (Fickel et al. 2018). In most cases, in rural areas, women farmers have been proven to be illiterate or had no form of education and they received less remuneration in AF work when compared to their male counterparts. Group learning enables women to learn collectively through observation and physical participation in AF projects (Fickel et al. 2018).

A participant had this to say:

Hmm...I realised that working in silos could not provide me with the knowledge I required for my AF project, therefore, I embarked on group discussions, which enabled me to get more information and developed a better understanding of AF practices. I am now able to arrange and organize the planting and growing of trees and vegetable crops together (6W).

Another one said,

When we are together we exchange what we know and go and do what I did not know when planting my crops, I have improved from my ignorance and lack of relevant knowledge, and group discussions assisted me to gain confidence in what I am doing. I use to do things in the wrong way, but now I know what I am doing (5W).

The participants acknowledged that group learning had proved to be the essential method to share information and ideas (Ozkan et al. 2016; Blaine 2005). This is prevalent in rural areas where women farmers embark on AF practices focusing on food crop production and cash crops. Through group learning, women participants confirmed that their knowledge was the multiple benefits of trees.

The study in the Hlabisa district in KwaZulu Natal in South Africa, aimed at exploring the socio-economic and cultural policy issues that affected community development, women farmers reflected on various ways in which they benefited from trees (Masuku 2005). The study revealed that cash crops had limited success in poor rural farmers because of the limited policies and essential institutional framework to support farmers.

Women farmers lack access to various basic requirements such as land, financial support, and extension services and group learning that enabled them to access extension services through the existing institutional framework (Masuku 2005).

Women farmers commonly used local newspapers, and commercial and community radios as their source of information in rural areas. It is critical to review the role of mass media in creating women's knowledge in AF.

One woman said,

Wow..., in the morning before I go to the gardens, I use to listen to the programmes called “**Phez’ukomkhono**” which are Ukhozi FM programmes advising farmers about all agricultural activities and motivating them to embark on farming. The programmes use to invite service providers and government officials to make presentations on issues pertaining to AF practices (9W).

It is crucial to reflect that radios have been used as a source of AF information and technologies for some time. It has become a favorite mode of information dissemination in developing countries. Radio is frequently used because it is easily accessible and affordable to almost all rural women farmers.

Radio was used for information dissemination purposes in India and Nigeria, and it was incorporated into other communication means to establish conducive platforms for debates and discussions to clarify AF critical matters (Rao 2015; Adegboye, Oyinbo and Owalabi 2013).

This learning model enables women farmers to be easily attached to technical aspects, government and extension agencies, policymakers, other women farmers, commodity providers, and direct purchases (Rao 2015; Adegboye, Oyinbo and Owalabi 2013). The study in Nigeria revealed that women farmers sourced 76% of AF information through radio use. Similarly, in Uganda, the more significant part of AF knowledge that women farmers attained, was through the radio (Ajijola et al. 2015).

Formal Agricultural and Forestry training in South Africa is an obligation of agricultural institutions which provide agriculture training at secondary and tertiary stages. Formal learning is the planned, structured, and organized learning technique, usually organized by institutions and characterized by certification ceremonies (Schugurensk 2000). One college in Eastern Cape Province provides forestry training and one Technikon in the Western Cape. Currently, there are only two institutions under the Ministry of Agriculture in the Province of KwaZulu-Natal. Graduates from these institutions are employed as Extension officers by the government through the Ministry of Agriculture or private companies.

These extension officers are distributed throughout the province to provide technical and advisory services to farmers.

Extension officers' responsibilities are to provide farmers with agricultural knowledge and skills through farm visits, workshops, and field days (Ainsworth and Eaton 2010).

One woman farmer said:

Eish...as I am in the rural areas, getting any form of training or learning about how to make AF decisions is impossible. I can reflect that previously the government used to place agricultural officers in rural areas in an advisory capacity, but now, we do not see those people and we lack the training that should assist us to develop our knowledge and skills in decision-making in AF practices, government officials do not visit us in rural areas any more. Even if I visit their offices, they are always not available. This is a problem (15W).

The participants (30%) agreed that introducing suitable technical training could offer them an opportunity to gain more knowledge and participate effectively in decision-making. Training is essential for women participants for the dissemination of information purposes. Training enables rural women, and farmers, to adopt new AF practices to sustain their livelihoods (Van Dersal 2017).

Evidence has been noted in Uganda, where local farmers have disseminated and adopted AF practice information. This has made the acceleration of economically and ecologically complete AF practices accepted. Technical training requires strengthening enhanced AF technologies dissemination in the rural areas where AF practices have been practiced (Van Dersal 2017).

The majority (68%) of women participants agreed that technical training could contribute to the development of a national strategy, which could cover a wide variety of applications of enhanced AF technologies for rural poor women's sustainable livelihoods (Van Dersal 2017). The participants acknowledged that formal training was crucial for women farmers since their illiteracy had been identified as the major stumbling block to actively participating in decision-making.

More participants, 80%, affirmed that their inability to write and read applicable documents and to occupy leadership positions in women's organizations contributed tremendously to their lack of participation in decision-making. Opare (2005) affirms that there is a demand from women's organizations for literate leaders, who can connect with other local organizations and articulate women's collective views and opinions in their formal gatherings.

6. 6. Conclusion

The chapter discussed how women learned about agroforestry decisions, educational processes and strategies that enhanced their participation in decision-making. Non-formal, informal, and formal learning themes and their sub-themes were fully discussed. The generated and analysed themes reflected that patriarchal systems are still prevailing in African developing countries.

The chapter presented the context of learning, where social learning was presented as the concept reflecting how women learn about AF decisions, educational processes and strategies that were in place to enhance women's participation in decision-making in AF.

However, the chapter discussed learning as a process that encompasses cognitive processes that permit an assortment of information in different ways that add to the learner's capability to make decisions.

This has been dramatically recognized as a contribution to the transformation process of the learner. It is essential to indicate that learning developed from social learning as a component of the experience. However, there are perceptions that patriarchal systems still undermine women's role and participation in decision-making in AF.

The chapter elaborated on what feminists are alluding to, about social learning as a concept. This showed that women are more frequently constrained to social learning than their male counterparts. Feminists suggest that social learning should provide women with an opportunity to contribute and develop their social ability, and individual skills, enhance their knowledge and keep up with their social obligations.

In conclusion, the chapter concentrated mainly on learning, that women should access diverse educational set-ups, and non-formal, and informal strategies.

The chapter analysed themes and sub-themes generated and thematically analysed them to address the major question of the study and summarised what has been presented throughout the chapter.

Chapter 7

Conclusions and Recommendations

7.1. Introduction

This chapter summarizes the major points from the previous chapters before zooming in on conclusions and recommendations about the findings of the study. The findings on how women participate in decision-making in AF. This chapter discusses findings and makes recommendations for future research on how women participate in decision-making in agroforestry in Umvoti.

In rural areas, women were experiencing competence challenges. The study outcomes reflect that the majority of women participating in AF were middle-aged and had no form of education. Women were participating in food crop production and preparations for the marketing of AF products.

The study revealed that women required education in all AF activities, including harvesting and post-harvesting operations. Most (86.7%) of the participants in the study area were married. Women's participation in improving cropping intensity level and minimizing the food scarcity challenges in the country shortened training programmes on crop production, livestock management, and women's skill development programmes were required.

The purpose of the study was to explore what is currently happening intending to improve the participation of women in decision-making in AF. Women's nature of participation in decision-making in AF was examined.

7.2. Women's participation in AF decision-making

The study concluded that women's involvement in the design and decision-making of AF projects was ignored. Women are neglected even though they rely more on AF activities to sustain their livelihoods (Akhtar et al. 2018). Similarly, in Umvoti, women still depended on food crops and cash crops production for firewood and building material. Women produced food crops such as vegetables from their land to sustain their livelihoods.

The study further explored the status of rural women participation in various AF practices and their essential characteristics and the human relationship with their involvement in AF practices. Subsequently, it was realized that women's participation and their status of participation in AF practices were affected by their characteristics.

The ages, educational levels, household size and individual household income, size of land allocated, access to credit facilities, and access to training were considered the most crucial factors affecting women's participation in AF decision-making.

Based on the study outcomes, the conclusion was reached that the majority (80%) of women in the study area participated in AF practices, but were excluded from decision-making. Women in the study area were motivated by AF practices, hence, they had no option and they demonstrated self-motivation to AF practices.

However, it was realized that women farmers who had low levels or no education had high levels of participation in AF practices, whereas those who had secondary and tertiary levels of education had medium and low participation levels. Thus, the outcomes of the study reveal that women participants frequently participated in AF practices.

Although women lacked access to resources and chances, there was a necessity to provide adequate time for productivity. Noticeably, women always encountered challenges and severe constraints as compared to men to access productive resources, including marketing and services.

The identified “gender gap” prohibited women's productivity and limited their contributions to the AF sector and the accomplishment of wider socio-economic development goals (FAO 2011). Narrowing the gender gap in AF would produce vital profit for society by augmenting AF productivity, alleviating poverty and hunger and encouraging economic growth.

Subsequently, this proves that AF practice is the only manner in which women sustain their household livelihood. This reflects that women in the forest areas have no other option other than agriculture and forests (FAO 2011). Information gathered reflected that women's participation was high in food crop production and low in cash crops.

Generally, the extent of women's participation in AF ranges from land preparation, seed sowing, livestock such as poultry, cattle and goat management, weeding, harvesting, planting, collection of dead branches as firewood, marketing, watering, pruning of plants, seed treatment, germination of seed, milking, ploughing pesticide and herbicide control.

It was observed that a large number of households who were interviewed, were medium households and few others were small households. However, the outcomes revealed that the majority of women participants had few or no personal assets, and had no access to resources such as land.

The study outcomes indicated that the majority of women farmers were in the low-income category, and that proved that men were still playing the dominating role as household heads. Men's responsibilities are supposed to play a role of protection and provision in the household.

The study reflects that the women's roles are to take care of the household chores and perform fieldwork in their AF plots for food crop production. In African countries such as Zimbabwe, Kenya, Nigeria, and South Africa. The vast and increasing population frequently relies on agriculture and forestry to sustain their livelihoods and accomplish economic growth (FAO 2006).

Women considered that their lack of participation in decision-making was unfair, hence, they spent extra hours in AF activities and domestic chores than their male counterparts. In developing countries, women account for approximately 60 to 80 per cent of food production (Chingarande 2009).

Women scarcely own the land on which they are working, they have tenure security or control over the land. The formal legal system regulates women's access to land through customary laws. The formal legal system and customary laws have similar characteristics to forbid and encourage women's lack of access to land, particularly in developing countries (Chingarande 2009).

The traditional legal systems' constitutions or land laws grant gender equality in access to land. Still, marriage, divorce, and inheritance laws contradict these laws by discriminating against women and daughters. Customary laws regarding land tenure in pre-colonial Africa often granted women access to land.

This right was lost through the introduction of individual ownership (Chingarande 2009). Customary law systems currently cannot give gender equality and access to land. Traditional systems of property tenure account for 75 per cent of the land in most African countries. Women's lack of access to land restricted the implementation of land laws and land legislation.

Knowledge and experience that women had, proved beyond doubt that they contributed extra to indigenous forest foods such as wild leaves, fruits, roots, tubers, seeds, nuts, mushrooms, saps, gums, forest animals and their products (like eggs and honey) to supplement foods produced by agriculture and food obtained from other sources (Shackleton et al. 2011; Munmun, Saker, Hoque, and Kabir 2015).

Hunting and fishing activities are mainly considered men's domain because they are regarded as the public sphere, women tend to collect edible forest plants, fruits, and medicines and believe it is a private sphere (Shackleton et al. 2011; Munmun et al. 2015).

The rapidly increasing population growth in Southern Africa has worsened the economic challenges and improved food, resulting in tremendous pressure on the land base.

Thus, this increasing population has resulted in the over-utilization of the land through agricultural activities (NEPAD 2003). This process enabled the women to make informed decisions and access skills and knowledge for sustainable livelihoods.

There was a compromise that gender dissimilarities in the extent of ownership and access to assets, land tenure systems, education, extension, and health have contributed to lesser AF productivity and advanced poverty levels (Peterman, Behrman and Quisumbing 2010).

Feminists are alluding to social learning as a concept where women are frequently constrained to social learning chances than their male counterparts (Higgs and van Wyk 2007). Various feminists contest that social learning should offer women an opportunity to put more effort and develop their social ability, and individual skills, enhancing their knowledge and keeping up with their social obligations (Lekoko and Modise 2011).

Literature from African countries reflects most information on feminists and social learning from the northern countries. However, the literature is unable to address women's interests from the southern countries. Women's concerns are about various factors such as racialism, exploitation, neo-colonialism, and gender (Preece 2009).

Thus, it is perceived that to realize the oppression that southern African women are experiencing, suitable strategies should be adopted (Preece 2009).

In contrast with the southern feminist, the western feminist perspective is that African feminist women opt to include men in their discussions (Goredema 2010). Thus, in this context, African women acknowledge the presence of their men because of their patriarchal character in most African countries. Therefore, men have a crucial role in women's emancipation through learning (Apusigah 2009).

Based on Freire's pedagogical theory of the oppressed, women's consciousness development enhances the possibility of individuals liberating themselves by challenging and changing the social structures, dehumanizing them, and acting to build a new society (Freire 1973).

Thus, through Freire's lens, emancipatory education is the type of education that looks for opportunities where women can demonstrate that they are engaging in dialogue and taking action because of increased awareness of a situation.

In this context, this study included Freire's philosophy of emancipatory learning to understand what educational processes and strategies are used to enhance women's participation in decision-making in AF.

Emancipatory education would create an enabling environment for the oppressed to critically challenge any domination and exclusion that reduces the maximum and reasonable involvement of the oppressed in their community_lives (Rhoades and Torres 2006).

The Socialist feminists advocated the Gender and Development (GAD) approach, which recognized that African men and women are bound to work collectively to eliminate all forms of oppression. Collective working can improve the understanding of men's roles in social institutions in women's oppression (McFadden 2010).

African feminists contest the western conceptualization of the 1970's Women in Development (WID) movement that did not appreciate women's indigenous knowledge (Goredema 2010).

In the African context, women's social learning requires an understanding of the hostility between men's oppression, group action processes, and the preservation of indigenous values (Gordon 2010). The philosophy of colonial education was criticized by black feminists claiming that they are self-directional, independent, and self-reliant (Gordon 2010).

African feminists' philosophy claimed that black feminists' social learning embraces mutuality and degrees of liberty, which acknowledges the seriousness of others instead of individualism. Furthermore, it requires men's participation in women's emancipation and empowerment with women's learning inclusive (Omolewa 2002).

Social learning and education can improve individuals' opportunities for a better healthy lifestyle. It goes beyond doubt that social learning and education significantly contribute to the nation's economic system (Preece 2009). Social knowledge is essential for women as it enhances their societal positions regarding decision-making ability, leadership skills, freedom, and capability to associate worldwide.

It is worth noting that women farmers require learning and education to practice farming effectively and efficiently (Suen 2013). This would enable women to embark on informed decision-making strategies concerning their AF activities. Regrettably, in most African families, including South Africa, where the more significant portion of land is still rural and under the traditional authority administration, girls' and women's education is not a priority (Suen 2013).

The feminist styles are employed to assist women in challenging the current and existing circumstances and pursuing critical analytic thinking regarding women's empowerment, oppression, and dominance. Modern farming methods and new technologies are vital skills for women farmers through social learning (Preece 2009; Tapsoba 2002).

Women who have limited access to modern farming methods and technologies would have less access to primary education (Preece 2009; Tapsoba 2002). Therefore, women are negatively impacted regarding personal identity, vocalization, and dominance. However, in most cases, African women's social learning processes foster household chores and societies (Morojele 2009).

Thus, cultural and social learning structures are discontinuous, while simultaneously, the current learning opportunities are inaccessible because of women's extended working hours. Furthermore, women's social learning is related to independence and freedom, and women are restricted in this respect because of their household tasks commitments (Preece 2009).

There is a perception that those employed in the informal sectors cannot access training, which significantly contributes to their marginalization and denies them an opportunity to access financial assistance. However, this significantly impacts women because they cannot participate in a broader scope of AF activities (Preece 2009; Tapsoba 2002). Thus, in this context, social learning is exposed to criticism. Social learning criticisms were the consequences of neglecting the public and private domain complexity.

It further denies women opportunities of getting access to education and training (Passarelli and Kolb 2012). The significance of women farmers having access to learning processes for the rest of their lives to achieve their objectives would be appropriate for women to learn from their experiences.

Furthermore, analysis using thematic analysis perceived that non-formal and informal learning have a positive impact on women's participation in AF decision-making (SOFA 2011). However, formal learning could not provide adequate information to women farmers, because the majority of women participants had no form of education.

Thus, this can have a negative impact on women farmers.

The duration of formal training would provide a negative attitude toward women's AF practices. Women experienced discrimination against critical social needs such as access to education, land and land rights in African countries, including South Africa (NEPAD 2003).

Women in traditional rural authorities are mostly still under the patriarchal systems, prevailing in other African developing countries (NEPAD 2003). However, social learning as the concept contributes to women's socialization process to acquire knowledge on AF decision-making.

The social learning concept reflected that women farmers can acquire knowledge and transform it into experience through informal, non-formal, and formal learning. Thus, the study elaborated on themes that were essential for women's access to education and training on AF knowledge.

However, there is a great need for women's education, particularly, extension services, training, or education. Thus, this was a challenge where women farmers were expected to adopt new AF technologies and improve their decision-making abilities to participate effectively in decision-making processes, particularly in AF practice.

Thus, informal, non-formal, and formal learning, which were realized to be extremely fundamental forms of social learning, endeavoured to cover areas of education and training and learn about AF decisions. However, women never received any extension services, training, or education.

Thus, this was a challenge where women farmers were expected to adopt new AF technologies and improve their decision-making abilities to participate effectively in decision-making processes, particularly in AF practice. Extension services as a form of women learning and training would contribute to their participation in AF decision-making (Tewari 2008).

However, the information about women participants' educational condition revealed that the highest proportion of women participants had no education or was illiterate and others had primary education, and very few of them had secondary and tertiary education levels.

Education is crucial in acquiring knowledge and information about AF practices and new technologies. Women participants raised a concern that they would have participated in AF activities if they would have acquired adequate knowledge about AF practices. It was observed that the highest proportions of the women participants were in low levels of information-sharing platforms, which are essential modes of information dissemination.

Further, observation indicates that the highest proportions of the women participants were in a low level of information-sharing platforms, which are essential modes of information dissemination. Women participants also indicated that they lack access to extension services, which could have provided them with AF information.

Moreover, the study outcomes reflect that the majority of women participants in the study areas practice AF to sustain their households' livelihoods.

Further, the study outcomes revealed that AF is the primary job creation for women to sustain their livelihood, hence, the majority of women participated in AF practices (Azad 2003).

Women farmers play a crucial role in the AF labour force to generate income from AF produce that would enhance their socio-economic household status. Prevailing evidence reveals that women do most of the work about AF practices. Women frequently offer vital labour force contributions to AF, such as planting, weeding, watering, harvesting, and marketing their AF products.

Women's opportunities in the agricultural sector are limited to low-return activities of little or no interest to men. Women themselves have no say regarding decision-making (Shackleton, Paumgarten, Kassa, Husselman, and Zida 2011).

7.3. Recommendations

Agroforestry, as the process of integration of trees into agricultural systems, has the potential to contribute to the diversification of farming systems that enhance food security while accomplishing agricultural productivity (Izac and Sanchez 2001; Kiptot et al. 2014).

Thus, AF has been recognised to have the potential to contribute to food security. Women's participation in AF decision-making is constrained and requires to be enhanced.

It is crucial to understand how women participate in decision-making in AF practices for food security sustainability.

Further, to accomplish women's objectives of providing AF sustainable development, food security, and environmental sustainability, consideration of interventions is required.

Kiptot et al. (2014) affirm that there has been a broadening recognition of a crucial improved understanding of how women participate in AF decisions within the household. However, the study from Malawi on tree planting decision-making reflected that the household head is primarily the decision-maker, hence, this role of the household head is attributed to the husband or male.

Furthermore, an enhanced understanding of household-level decision-making is necessary to enhance the effectiveness of AF policy interventions (Wiig 2013). Thus, studies from developing countries such as Kenya, Malawi, Tanzania and Uganda reflected the challenges and difficulties in capturing gender differences in AF decisions. Studies further highlighted the dangers of gender stereotypes in AF practice programmes (Takane 2008).

The land is considered the most fundamental resource for women's empowerment, they are still deprived of access to the land (Mutangadura 2004). South African women rely on the land to sustain their livelihoods. However, despite their essential roles in AF, women are still primarily discriminated against for their land rights in the sub-region.

Despite their central role in AF production, South African countries are continuously experiencing discrimination in accessing land.

Mutangadura (2004) affirms that women have no right to own and control the land because of the patriarchy and discrimination in legislative laws. Customary laws consider women as minors, and they are treated as children.

Women denied allocation of land, inheritance, or making decisions about the management and use of land. In the sub-Saharan region access land through their husbands or fathers, as they are given legal rights as land passes through the male figure (Mutangadura 2004). Thus, it is strongly recommended that the authority should provide an adequate development programme in the AF practice for women farmers' social welfare.

The study recommends that the economy's change in traditional structures is the essential personal effect of colonial rule in Africa (Apusigah 2009). Like in any other part of the African developing countries, Umvoti men and husbands migrated to towns and cities in search of jobs, leaving women behind in the rural areas assuming domestic roles, including those of their husbands or men (Apusigah 2009).

Even though men and husbands or fathers were labour migrants who were always away from their households, the Land Apportionment Act of 1930 perceived women who resided in the rural communal tenure as husbands, fathers, or male guardians (Mbilinyi and Shechambo 2009). Thus, the study recommends that married women should assume household responsibilities and make household decisions.

The availability of various extension services would increase women's opportunity to access information about AF practices. Further, the study revealed that the highest proportion of women participants had very low or no training exposure. Finally, the study shows that a high number of women participants had no access to credit facilities.

Extension services enable people to be extremely conscious, rational decision-makers and informative about AF practices. Thus, the extension officers should offer day-to-day visits to women to encourage them to effectively communicate with them for their AF practices.

The study further recommends that various development agencies such as Government Organizations (GO) and Non-governmental organisations (NGOs) should provide necessary incentives and support to women farmers for their accrued crop production in a sustainable means (SOFA 2011). Thus, extra training is necessary and should be provided to women farmers so that they practice AF activities efficiently.

Extension media contact enables women farmers to become extremely conscious, rational decision-makers and informative about AF practices (SOFA 2011). The extension personnel should provide regular visits to women farmers so that they can make effective communication with them for their AF practices. It is strongly recommended that the authority should provide adequate development programmes in the forest areas for the welfare of women farmers.

In conclusion, a crucial and positive relation was found between access to training and women's participation in AF practices.

This revealed that women who have high training exposure had high participation in AF practices. Thus, training and education widen the mentality of the respondents.

However, considering women's lack of access to land and land right tenure, which restrict them with decision-making abilities and power over the extent to which how the land and its outputs are used, The study recommends that the Government should consider repealing customary and traditional laws which prohibit women to access land and own the land.

In developing countries, formal systems and customary laws are significant contributors to women's lack of land and land rights tenure. However, in Zimbabwe, the Native Land Husbandry Act (NLHA) was imposed as discrimination concerning AF and land distribution against women (Matondi 2012).

The Native Purchase Areas were mandated to men who could qualify for tenure rights and were expected to possess the assets. Women were excluded from owning assets (Matondi 2012). In 1994 South African democratic government came into existence where the new government committed to addressing gender disparities, particularly access to land and land ownership. However, the study recommends that structural inequalities, which remained due to the traditional discourse that mandated men's land ownership be reconsidered.

Thus, women were left out of pertaining knowledge on how they can participate decision making. Women were in a predicament regarding how can access land and acquire knowledge of decision-making in AF (Masiwa 2004).

In African tradition, the land belongs to men, and women were not allowed to own land and have rights on land, yet women provided a more significant number of AF labour (Oluka 2016). The study revealed that husbands allocated women a small plot for AF practices.

Women would use that small plot of land to produce food crops domestically. Nonetheless, policies and legislation existing to regulate land use were eradicated so much as customary laws and formal systems were appropriate, yet economic value requirements were absent (Oluka 2016).

Women's exclusion from participating in traditional authority councils significantly affected women being ignored in different decision-making stages. The study recommends that women participate in decision-making at local levels and voice their opinions, views, perceptions, and beliefs.

Women's deprivation of opportunity to participate in decision-making results in their exclusion in issues about land access and contributes to their lack of participation in development processes (Khairzad 2016). Women's involvement in development processes permits them to gather and discuss their development priorities within a formal framework for the first time and seriously consider their concerns.

Based on various facts that women's lack of access to land and tenure rights, the study recommended that the establishment of land policies, land legislation, and the implementation of these land policies and legislation would be appropriate (Matondi 2012).

Women's involvement in land policy development processes is essential to enhance their access to land and contribute to decision-making in AF activities.

Literature showed that women significantly accessed the land through land reform in countries where the participation of rural women is a distinct state policy. Thus, this study recommends that policies consider land reform a better incentive for women's involvement in AF decision-making. The land policy would enable to ensure women's equal access to land (Matondi 2012).

The land policy requires to be based on the principles of gender equality in access to land, have clear objectives on equal access to land, and have indicators and baseline data to enable follow-up (Matondi 2012). The study further recommends that introducing land legislation would help regulate women's access to land.

Many laws regulate women's access to land legislation, marital law, and inheritance laws, which interact with women's access to land, and how statutory law can encourage women's access regardless of their marital status. The provision of new land tenure, land redistribution, land reform, divorce, and inheritance laws would offer more significant opportunities for women towards a gender equality legal framework (Sida 2009).

The provision of these laws and legislations alone is insufficient to secure women's access to land; hence, the effectiveness of laws depends on awareness about the rules, the abilities to invoke them, and to what extent cultural norms and traditions are practiced and followed instead of formal laws (Sida 2009).

Women farmers moved the absence of these laws and legislations neglect them in all spheres of participation and restrict them from becoming landowners and managers. The introduction of these laws and legislations would enable women to elaborate on their happiness with their new status while their husbands show resistance to it. This recommendation of introducing laws and legislation would create a gender quality struggle.

Although women farmers alluded to the fact that they are successful in their AF activities, they need to grow through various levels of personal growth as they progress from being independent (Khairzad 2016). The women farmers revealed that they move into their households as subsistence farmers as they manage to carry out operations such as weeding, planting, and harvesting in their small plots.

Women farmers indicated that their responsibilities in AF accommodate household chores that overload them, yet they still experience discrimination in decision-making even if they are married by their husbands, neighbours, traditional authorities, and officials because they could not accept them as landowners (Khairzad 2016).

However, the discrimination process shows the strength of male domination in making women realize attributes to the impression that there is a single authority of truth, which assists in illustrating constraints that women would be confronted with when they acquire their land for farming.

These laws and legislations would promote gender equality and empower women, providing them with new roles and responsibilities as landowners and land managers (Khairzad 2016). Women farmers would be delighted with their new status and possibly commit much more to AF practices.

However, there is a perception that this move for equality would get support from women's husbands, who might perceive this venture as a threat to their power and provide gender power tensions (Apusigah 2009). Therefore, women farmers would pursue their husbands to ensure that they support this kind of initiative.

Women farmers play an essential role in harvesting and marketing AF products. However, with these new women's roles, men would be motivated by the financial income that women would generate through the sale of their AF products. Thus, women farmers should acquire the support they require from their husbands; this would limit power struggle, permitting their husbands to make decisions (Apusigah 2009).

Furthermore, women farmers would progress from a disciplinary stage of power rebellion (Mutopo 2011). This is the stage where inactive women farmers succumb to discrimination against them.

Women farmers would understand what they require and ensure that their decision is considered and implemented. Thus, women farmers would employ manipulative techniques to use a third person to interact to pursue their objectives.

These land laws and land legislations would supersede formal systems and customary laws. They would enable women and farmers to employ various modes of agency and self-determination processes to farm their lands (Mutopo 2011). The literature on previous studies from other developing countries such as Tanzania, Nigeria, Kenya, and Zimbabwe has identified this strategy as mostly successful (Mashavave et al. 2013).

This strategy reflects that women assisted in developing the women's projects through their participation and interaction with other women in AF (Mashavave et al. 2013). The study reflected that their self-determination was to put more effort into their work regardless of the opposition they were experiencing.

Women's success narratives on their commitment were reflected in the intensive work that they have portrayed (Mashavave et al. 2013). The study in Zvimba revealed that women farmers improved empowerment through their progress in AF product marketing. Thus, this offered them an opportunity to recognize society and their knowledge to participate in informed decision-making.

Consequently, women, and farmers exhibited financial achievement through excellent AF product harvests and recapitalized enterprise (Apusigah 2009).

Women farmers purchased AF equipment, managed to have sustainable water sources through the establishment of boreholes, and managed to better build houses for themselves and their families, which reflected their extraordinary seriousness to AF practices.

Further, women farmers portrayed a new truth regime that reflected their prosperity through determination in their intensive work (Mashavave et al. 2013). Women farmers' determination to progress was realized by other local communities, and they accepted them. Thus, it revealed that women could enhance their lifestyles, including their families (Mashavave et al. 2013).

Through the sale of their AF products, women farmers managed to purchase household goods and for their children (Apusigah 2009). This study recognised that women farmers used their income from selling their AF products for their families benefit.

Women farmers' economic benefits offered a new principle in social relations, impacting how the new dispensation of gender empowerment was adopted in women's farming positions, and it proved beyond doubt that their lifestyles improved enormously as this enabled them to cater for food security, provide their children clothing and education, and other domestic requirements (Mashavave et al. 2013).

Mostly, the literature concentrated on women farmers' challenges, but little has been mentioned about their self-determination strategies and success narrative (Apusigah 2009).

Literature has revealed anything regarding the process of gender empowerment about economic benefits; thus, it has been identified as a gap that requires future further investigation.

Further, education offers skills to perform AF practices effectively (Mashavave et al. 2013). However, it's worth mentioning that after achieving training women could learn about various facets of AF, hence, the outcomes reflect higher participation of women in AF practices.

Women farmers experienced interaction and discussions with others during the learning process through socialization (Ntseane 2011). Thus, Kolb's experiential cycle was considered through an interactive process of various learning processes, which Kolb has not covered in experiential learning.

Kolb's experiential learning has not discussed how women farmers learn about AF decisions, which under-represented the issues of collective knowledge in African contexts (Ntseane 2011). Non-formal and informal learning as the primary sources of learning employed by women farmers is recommended as it would be appropriate for them to acquire knowledge on AF practices.

The study realised that methods of acquiring AF knowledge such as extension services, field days, workshops, demonstration plots, mass media, and peer-to-peer interactions. are essential for women farmers. However, women farmers raised a serious concern that extension agents or officials inadequately supported their agricultural knowledge requirements (Mudukuti and Miller 2002).

Workshops are recommended women farmers extremely benefited from them, however, the duration of these workshops was two to three days, which necessitated women to a sleepover, yet they had to attend to other domestic work.

Women farmers normally missed sessions conducted after hours because they were obliged to return home due to a lack of sleeping accommodation at the venues (Mudukuti and Miller 2002). Thus, it is recommended that workshops should be conducted in an accessible venue.

Participants raised concerns that the workshops should be increased to more than one workshop per year to meet women's requirements. Extension officers responded that the limited number of workshops is due to financial constraints (Mudukuti and Miller 2002). Women farmers acknowledged that field days were prosperous.

Field days are also recommended, however, women farmers complained that there were very few field days organized per season; thus, more field days are requested to accommodate various operations of AF. Thus, women farmers preferred more field days because they felt a famous interactive and hands-on information dissemination strategy (Mashavave et al. 2013).

Visitation of demonstration plots and demonstration exercises was fruitful because women farmers could observe how AF operations such as manure application, weeding, planting, harvesting, post-harvesting, and seed preservation are appropriately carried out. Thus, government extension officials and service providers should organize more demonstrations visitation as part of non-formal learning.

This proved women farmers to be prosperous, although they were also very limited (Mudukuti and Miller 2002).

The study recommends that the demonstrations should be encouraged to reflect on what other women farmers are doing better than what they are practicing in their small plots or community gardens. Service providers also used mass media as a form of a non-formal learning process (Mashavave et al. 2013).

The study recommends the use of mass media, as a dialogue platform to discuss and clarify women's AF matters, hence this mode of learning will enable them to make telephonic conversations and clarify AF issues during live radio programmes.

Informal learning as a source of women farmers' information dissemination is recommended, where subject matter specialists, service providers, and equipment and seed suppliers would offer AF information to farmers over the phone (Akullo and Malumba 2016). Most women farmers agreed that they had access to cell phones, hence, it has become popular in other developing countries like Uganda, India, Zimbabwe, and Nigeria.

Both radio and TV programmes are used to disseminate information to women farmers since they are non-formal learning techniques vital in offering AF knowledge to women farmers (Rao 2015). This has been recognised to be the most significant common source whereby women farmers acquire their knowledge and transform it into the experience.

This is the most suitable strategy, encompassing farmer-initiated field visits, telephonic conversations, voice calls, advisory services from extension officers and service providers, peer-to-peer interactions, and indigenous knowledge.

Frequent informal learning is recommended to enable women farmers, to reflect self-directness as their initiative to determine what, whom and how to learn, and they have been practicing in AF in their small plots allocated to them by their husbands or fathers (Chingarande 2008). Still, women farmers realized that they lacked knowledge of AF practices, which significantly impacted their participation in AF decision-making.

The study recommends that sufficient extension services should be considered as participants asserted that extension officers were very shallow, unavailable, or easily accessible, for them to learn from each other through observations or group discussions (Chingarande 2008). Thus, this portrayed self-directness, which emerged as the general form of women acquiring their AF knowledge.

Women used any opportunity that was available to them to learn about AF decisions. Therefore, this provided a clear reflection of high consciousness, motivation, and a need to prosper. Most of these sources were elderly women, which reflects that women farmers relied on older women who have been in the field of AF practice for a long time (Chingarande 2008).

The study recommends the recognition of IK for women farmers because it is mostly preferred by women farmers as African traditional knowledge, is readily available, accessible, and affordable (Vunyingah and Kaya, 2012).

Women farmers assert that IK is mostly relevant in land preparation, planting, weeding, and manual harvesting using hand hoes and cattle manure instead of chemical fertilizers.

IK is combined with current farming knowledge for effectiveness, particularly during harvesting AF products (Mokoena et al. 2012). Women farmers affirm that they could not combine IK and modern technologies because of the small land sizes they practice AF. The size of their plots only allows manual labour such as planting, weeding, manure application, and harvesting.

Alternatively, the utilization of new AF technology is recommended as another interesting attribute source of information acquisition, yet, the study revealed that women farmers had not reached the stage where they can be able to use modern technology to access knowledge (Akulo and Mulumba 2016). Thus, this poses a challenge to women farmers in adapting to new technology for AF practices.

The study recommends that discussion groups including farmers and agricultural experts should be encouraged to share information amongst women farmers, service providers, and government officials. Akulo and Mulumba (2016) assert that in Uganda, social networks such as SMS and WhatsApp proved to be effective for AF information sharing, this kind of social network could be ineffective in community rurality nature and lack of networks.

Although, women farmers reflected that they have access to the radios and TV, , they had not accessed computers to search AF knowledge from the internet. In addition, women farmers confirmed that they use their cell phones only for communication purposes because of their level of education.

Therefore, they cannot use them beyond the point of receiving calls and making calls.

However, SMS, WhatsApp, and chat groups proved to be highly recognized and influential in information transfer (Kilpatrick and Johns 2003). Similar findings are recommended where women farmers reflected that in the study with Australian farmers where women farmers' growth rate in technology was considered (Akulo and Mulumba 2016). Moreover, the literature has not elaborated further on this new strategy.

Exploration of this strategy is required, hence, women farmers indicated that they acquired AF information from their previous white farmers. Women farmers regarded this type of learning as informal learning, of which they gained vast knowledge and experience through this learning technique (Ntseane 2011).

Women farmers reflected various types of informal, self-directed learning strategies used as a powerful source of information. Informal learning strategies such as visiting, observing, and group discussions were highly effective because they were practical and interactive (Ntseane 2011). Previous studies excluded Kolb's experiential learning theory to analyze the process of women farmers' participation in decision-making.

Nevertheless, a participatory theory that enabled to explanation and inform the findings of this study was extensively discussed focusing on the methodology used to analyse how women farmers benefited from participating in AF decision-making and acquiring knowledge.

The study moved on to analyse participatory democracy theory, hence it was employed as a lens to illuminate how the women farmers accessed AF knowledge. Thus, the merits and demerits of participatory democracy theory were discussed reflecting its critiques and recommendations.

7. 4. Recommendation for future studies

7.4.1. Women's Exclusions in the Formation of Formal Laws and Legislations

Although experiential learning, was recommended, it failed to reflect the role of social interaction in the experiential learning cycle as a primary source of informal learning. Thus, this study recommends further studies on experiential learning whereby, experiential learning cycles would be able to reflect primary sources of informal learning that would enable women to acquire AF knowledge. Hence, women farmers reflected that they lacked the modern technologies and knowledge required for AF practices.

Even though women lack the necessary resources to obtain the ability to be used for AF farming, they resorted to using their indigenous knowledge (IK) (Vunyingah and Kaya 2012). Women farmers contested that IK, which they acquired from their elders when they grew up in their family, was used for subsistence farming. However, various studies from Botswana and Cameroon, revealed that women farmers used IK extensively in subsistence farming (Mokoena et al. 2012). Women farmers perceived modern technologies as the most expensive methods, which poor rural women farmers such as Umvoti could not afford to use it.

Women farmers were practicing weeding manually, where they were eradicating weeds by hand pulling and hand hoeing. They contested that using IK was preferred because modern technologies were costly and required financial support, which women farmers could not afford (Rees et al. 2000). Women were not inclined to use the combination of IK and modern technologies because of the sizes of their plots.

The study discovered a gap and an enormous craving for AF knowledge. The Agricultural Institutions lack the requirement to empower women with AF knowledge, and a significant gap in technical knowledge, business knowledge, and management skills was identified, thus, it is recommended that this should be given attention.

Women farmers are constrained on extension services in African developing countries, hence, the bias of extension officials towards was realised, and they tended to provide extension services to meet the male farmer's requirements. Women's lack of AF knowledge was because extension officials lack AF interests and were not competent enough to provide AF-related information to farmers (Umeta et al. 2011).

However, a great need for the government, particularly the Department of Agriculture, Land Reform, and Rural Development should provide financial support to women farmers to pursue AF education and training to maximize women's efforts in AF practices is recommended. In most developing countries, poor rural areas are under the traditional administration, making it difficult for government officials to empower women.

Women's learning processes mostly require social interaction, which proposes that women necessitate a collection combination of interaction, new knowledge application, and a comprehensive learning source (Umeta et al. 2011). Women farmers employed self-directed techniques, which possess a powerful motivation.

Although women farmers were not inclined to engage in IK because of the absence or lack of modern technology, women farmers opted to use IK or could not afford the employment of modern technology. Thus, this chapter proposes that the role of IK requires some reconsideration in terms of the extent to which it can be concerted with modern scientific technology for AF practices.

In this context, women in rural areas are cornered between traditional anticipation and gender equality. Women farmers assert that they always experience opposition from their husbands or men regarding gender equality. Women farmers attest that government officials and service providers must play a significant role in having traditional authority and men's mindsets changed to accept gender equality dispensation.

The situation of power dynamics has some connote on how women should acquire gender-sensitive education that would enable them to learn about AF decisions. Women have different potential learning sources that can be used to cater to various learning needs. Women farmers usually use self-directed learning, which is insufficient for women's needs.

Self-directness is a characteristic of observation that women require specific education intervention (Rees et al. 2000).

Thus, institutions responsible for agriculture and forestry must ensure that additional sources and possibilities for accessing AF information are readily accessible and affordable.

Therefore, it is recommended that an appropriate resource of information materials be made available for women farmers. Further, the study observed that technology as a valuable source of knowledge increases at an alarming rate, which calls for the prioritization of adult education, particularly for women.

Therefore, using technology during the learning process would be appropriate for women farmers (Umeta et al. 2011). Thus, it is recommended that education and training systems that incorporate modern technology should be encouraged to ensure that women farmers grip new technology (Umeta et al. 2011).

Although this might pose some challenges to women farmers because the majority of women have no form of education, and others have shallow levels of education, this would create an enabling environment for women farmers; hence they acquire accurate knowledge that would improve their productivity and contribute to economic growth (Degril et al. 2014).

The study recommends the utilization of modern technology in assisting women to acquire knowledge. The literature on the utilization of modern technology to acquire AF information and about the strategy was lacking. Further, this strategy is unsuitable in rural areas because of the lack of network and poor reception (Degril et al. 2014).

The study would appreciate if women's participation in AF decision-making could be further explored, hence, this study is central to understanding how they manage their gender power, social relations, and transition from indigenous knowledge (IK) to modern technology for their plots. Women experienced challenges in the learning sphere amid a conflict between gender empowerment and cultural expectations.

Women persistently suffer gender power differentials that impact their ability to manage their farms and access inputs and markets. Technology such as the internet, WhatsApp, and chat groups are also expensive for rural women because women would require data, and airtime to access information on modern AF techniques (Degril et al. 2014).

In this view, these disadvantages experienced by women were conceived and undertaken. A deeper understanding of how women learn about AF decisions and acquire knowledge, women used existing knowledge within the existing gender social relation required to provide a basis for recommending relevant training programmes for women farmers (Degril et al. 2014).

Education is a very crucial factor when it comes to decision-making. Thus, this reflects that women farmers' education training programmes should be introduced. Further, the government, policymakers, decision-makers and service providers must consider the seriousness of the women farmers training as AF role players. Thus, this would ensure that educational processes and strategies are gender-sensitive (Ntseane and Preece 2005).

However, given that gender substance in all production domains, not much has been documented based on gender subjects of AF output. Thus, this study recommends further analyzed the relationship between tree farming and the socio-economic factors in Umvoti municipality.

Consequently, studies in various developing countries have concentrated on the household head sex in their analysis, however, a wide range of literature considering gender and poverty, mostly conceptualizes the gender aspect as an issue of headship (Budlender 2005; Chant 2006; Deere et al. 2012).

Studies in less developed countries examining the relationship between female headship and poverty concluded that female-headed households are disadvantaged and poorer than male-headed households. Thus, this reflected the limitations of concentrating only on the household head gender, hence, the term household head is ambiguous and unexplored with administrative patriarchal system meanings. Thus, the meaning of household head is challenging to compare among various countries and cultures.

The study realized that female-headed households comprise a diverse category, thus, various studies are recommended to determine their extent in AF decision-making and to distinguish between various varieties of female-headed households (Deere et al. 2012).

Alternatively, Rogan (2013) made a comparison of female headship in South African post-Apartheid and the conclusion was a relationship between self-reported female headship and female recognised as the principal household income contributor.

Thus, the study recommends that factors such as household head sex, household size, age, education level, and sex should be considered for women's welfare. Further, factors such as access to land, land right, access to extension services and capital, crop yield, and household income are considered the most crucial factors for women to understand the local economy.

It is on this premise, that this study recommends further studies in AF to understand the processes and strategies currently in place to enhance women's participation in decision-making in agroforestry to make recommendations for improvement.

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APPENDICES:

Appendix 1.



LETTER OF INFORMATION:

Title of the Research Study: (Women Farmers)

Women's participation in decision-making in agroforestry in Umvoti Municipality.

Investigator/s researcher: **Sipho Masuku (21752071)**

Supervisor/s: _____

Brief Introduction and Purpose of the Study:

The purpose of this study is to explore the extent of women's participation in decision-making in agroforestry. The study further explores what is currently happening in relation to women's participation in decision-making in AF with a view to making recommendations to improve their opportunity to participate in decision-making.

You have been chosen because Umvoti Municipality was identified as the poorest municipality in KZN. Women were identified because they are the most victims of poverty and hunger and involved in most of domestic work including collection of firewood, looking after their children.

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They are also responsible for food security for their families yet their involvement in decision-making in agroforestry is ignored.

Process to guide Focus group discussions:

Kindly note that as a chosen participant in this study, you will be required to participate in observation of your AF land and focus group discussions of 20 participants and take part in answering individual interviews. Focus group discussions will be held at Umvoti Municipality Boardroom, which will not last more than 90 minutes. Individual interviews will be taking place in the field where women practice agroforestry. I will request your pleasure to have all activities related to agroforestry practices audio taped and recorded down during the course of the study. Our meetings, which will last only 30 to 45 minutes depending on the deliberations, will be tape recorded with your permission. During observation, women's application of practical knowledge of AF will be observed and will be recorded in my field diary for future references. Wherever, possible photographs will be taken with your permission. You are advised that this study will be carried out between **August 2018** and **December 2018**. There will be follow-ups that will be done to verify information in the form of exit interviews.

Risks or Discomforts to the Participant:

There will be no risks or discomforts experienced during this period since all activities including interviews and photos taken will be done only after your permission has been granted.

Benefits:

This study will give you an opportunity to air your views about how you experience participation in AF decisions. The findings will be used to make recommendations for training and how to enable you to participate in decisions more fully in the future. The findings will help me understand the challenges and achievements that you experience in AF and this will improve my own work in AF management.”

Reasons why participants may be withdrawn from the study:

Participation will be on voluntary basis and you may withdraw at any time from the study without providing any reason. Your withdrawal from participation will not have any negative impact on the study or to anyone choosing to do so.

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Remuneration:

You will be provided with R100 to compensate for your time and travel costs.

Costs of the study:

You will not be required to pay in any way towards the study

Confidentiality:

All information obtained during this study will be kept in a safe place. No real names will be used in any public document and your contact details will not be revealed to anyone. All information will be kept under lock and key.

Research-related injury:

You will not incur any injuries because of this study. If, for some reason, the interviews or discussions cause distress, a counsellor will be available, free of charge.

Research ethics administrator on 031 373 2375. Complaints can be reported to the Director: Research and Postgraduate Support, Prof S. Moyo on 031 373 2577 or moyos@dut.ac.za

Persons to contact in the event of any problems or queries

Supervisor:

Tel:

E mail:

Researcher tel: 082 801 3179; Email: SiphoMas@daff.gov.za

Appendix: 2.

CONSENT FORM
Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, **Sipho Masuku**, about the nature, conduct, benefits and risks of this study – Research Ethics Clearance Number:.....
- I have also received, read and understood the above-written information (Participant Letter of Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions (of my own free will) declare myself prepared to participate in the study.

- I understand that significant new findings developed during the course of this research, which may relate to my participation will be made available to me.
- I have agreed to have the interview tape-recorded.
- I have agreed to have photographs taken and used with pseudonym.

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---Full Name of Participant Signature/Right Thumbprint [if necessary]	Date	Time

I, **Sipho Masuku** herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

Full Name of Researcher	Date	Signature

Full Name of Witness (If applicable)	Date	Signature

Appendix: 3.



LETTER TO THE MUNICIPAL MANAGER UMVOTI MUNICIPALITY:

The Municipal Manager,

Umvoti Municipality

P. O. Box 71

Greytown

3250

10th April 2018

Dear Sir/ Madam,

RE: Letter requesting permission to carry out a study in Umvoti Municipality.

I am doctoral student in peace building at Durban University of Technology pursuing a study in agroforestry. I hereby request an authority to carry out a

research study in Umvoti Municipality. The title of my study is “Women’s participation in decision-making in agroforestry in Umvoti”. The purpose of this study is to explore what is currently happening with a view to improving the participation of women in decision making in agroforestry. The study attempts to answer the research question, “How do women participate in decision-making in agroforestry in Umvoti Municipality?”

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The study seeks to understand the extent to which women participate in decision-making in agroforestry in Umvoti Municipality.

In this study, anticipated number 10 women participant per ward will be selected from 4 wards, totalling to 20 women participants who will be observed twice followed by focus group discussions that will be carried out once during planting season and once during harvesting season. During observation, I will be observing women’s application of decision-making, strategies used by women to prepare soil, harvest produce, interactions the women make with others and amongst themselves to undertake their AF practices.

The findings of the study will be made available to the Umvoti Municipality for further inclusion in Umvoti Municipality Integrated Development Plans.

Research ethics administrator on 031 373 2375. Complaints can be reported to the Director: Research and Postgraduate Support, Prof S. Moyo on 031 373 2577 or moyos@dut.ac.za

Researcher: Siphon Masuku

Tel: 082 801 3179; E mail:

Supervisor:

Tel:

E mail:

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