



Cape Peninsula
University of Technology

**The potential use of Information and Communication Technologies to enhance
agritourism in Lesotho**

by

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DECLARATION

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ABSTRACT

Agritourism represents a significant form of strategy that supports the rural communities and enhancing the sustainable rural development. Over the years, technology has changed the nature of business transactions between the consumers and suppliers of goods and services. As within any other industry, changes driven by technology pose a major challenge in agritourism especially to farmers that do not have access to and knowledge about available technologies in agritourism.

This study explores the different Information and Communications Technologies (ICTs) available to agritourism farmers in rural communities. It also explores the information that agritourism farmers need in order to successfully run their farms, the different barriers and factors that inhibit the use of technologies by farmers as well as how these technologies can be used to enhance agritourism development in rural communities of Maseru in Lesotho.

The study is interpretative in nature and has employed an inductive approach. It involved four types of participants which include farmers, farm employees, tourists and government. Multiple-case studies were used as a research strategy selecting commercial farms using a non-probability sampling and judgmental techniques. Primary data was collected using face-to-face interviews with the respondents and a literature review was used to collect secondary data.

Data collected from the interviews was analysed using content analysis techniques. The main reason for using content analysis was to analyse the data collected and to get a valid overview of the different case studies which assisted in strengthening the interpretation and enhancing the outcomes of the research.

Since the study focuses on the factors that determine the use of ICT, it proposes a framework adapted from the Information Innovation Adoption Model to explain the behaviour of farmers and employees concerning ICT use. Despite the fact that ICT is being used and available *albeit* limited, the findings revealed that it is still a new concept to small farmers especially in rural communities of Lesotho. Farmers still do not know which specific ICT to use and how to use it and by whom in different areas of agritourism projects. On the proposed framework, the researcher included farm employees and tourists as participant and some the factors that are significant within the ICT ecosystem. From the framework, only factors that are significant and have a relationship with ICT use in agritourism will be evaluated. These consist of the farm size, farmer's age, income, attitude, education, farming experience, distance.

The findings revealed that, while ICT has the potential to enhance agritourism development in rural communities, issues like high cost of ICT, accessibility, lack of infrastructure, lack of ICT skills, lack of training, education and awareness are some of the barriers that inhibit the potential use of ICT in rural communities of Lesotho. The study also made some recommendations on how to improve or overcome some negative impacts affecting the agritourism farmers with regards to the use of ICT in rural communities.

Keywords: Agritourism, Agriculture, Tourism, ICT, rural developments, Information Innovation Adoption Model

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DEDICATION

I'm dedicating this work to my beloved parents Mr Daniel Mpiti and Mrs Malisebo Mpiti, thank you for your prayers and support.

Signed

Date

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GLOSSARY

ABBREVIATIONS

GDP	Gross Domestic Product
ICT	Information and Communication Technology
MCST	Ministry of Communication, Science and Technology
MTEC	Ministry of Tourism, Environment and Culture
SMME	Small, Medium and Micro Enterprise
TAM	Technology Acceptance Model
TRA	Theory of Reasoned Action
TALC	Tourism Area Life Cycle

DEFINITION OF TERMS

Agritourism	This is a specific form of local tourism that involves tourists staying on a farm and engaging in daily agricultural activities and learning of the traditional rural activities that take place on the farm (Havlicek, Lohr & Benda, 2011:45).
Arable land	Is an agricultural term, meaning land that can be used for growing crops.
e-Government	Is defined as the delivery of government related information and services to the public online through the internet or other digital devices such as area networks, fixed and mobile networks (Nkwe, 2012:40).
e-Tourism	Utilisation of ICT to enable tourism providers and destinations to operate more efficiently, reach and serve consumers more effectively with facilities to search, compare as well as booking tourism offerings through electronic medium.
Farm	An area of land and its buildings used for growing crops and rearing animals, typically under the control of one owner or manager.
Tourism	Tourism comprises the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited (George, 2004:20).

CHAPTER ONE

GENERAL INTRODUCTION

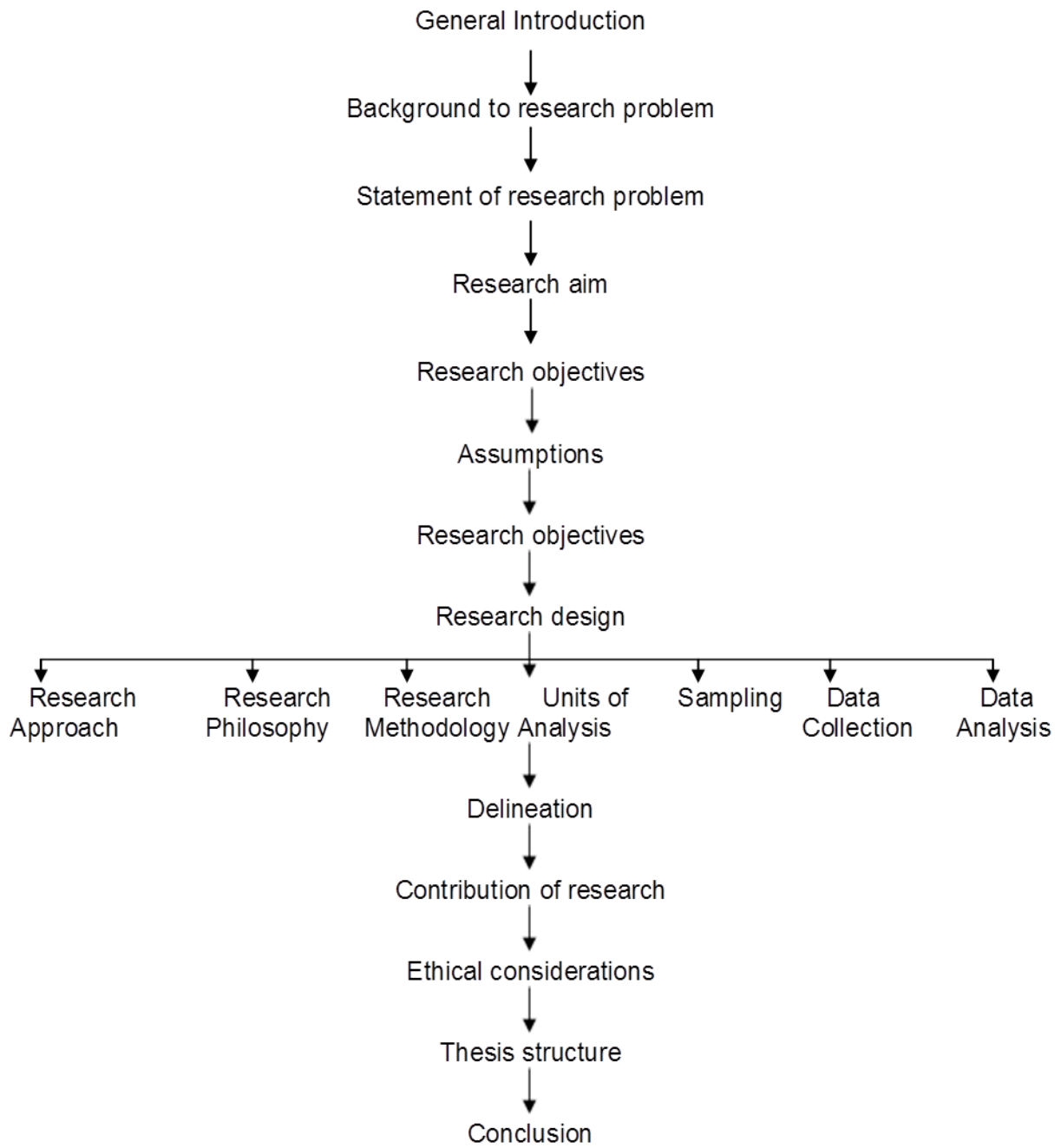


Figure 1:1 Layout of Chapter 1

1.1 Introduction

Information and Communications Technology (ICT) plays an important role in promoting and improving the livelihoods of farmers in the agritourism sector (Maumbe, 2012). With the growing demand for agritourism products and services, ICT has opened opportunities that could assist farmers to overcome potential barriers related to sharing and exchanging of information, disseminating knowledge and how to sustain and improve their livelihoods (Nnadi, Chikaire, Atoma, Egwuonwu & Echetama, 2012). Singh (2012) concludes that information is important in agritourism and access to information needs to be on-a-demand basis, being accurate and timely. Ma Corazon and Lunning (1998), state that the lack of information can lower the efficiency of production decisions among farmers. The availability of information is required for the sustainability of agritourism. According to Munyua (2000), ICT assists in distributing information to rural communities and gives access to knowledge needed by farmers and farm employees in their daily operations and long-term strategic planning needs.

ICT strengthens the role of agritourism by allowing access to relevant information that may have an effect on the contribution of sales and profits. According to Lawrence (2009:222), "ICT has changed the nature of business transactions between consumers and suppliers of goods and services". Information Technology (IT)-enabled services are useful in improving the capacity and livelihoods of farmers (Parker, 2009). For example, mobile cellphones have significantly reduced production and communication costs and provided new opportunities for farmers in exchanging relevant information through short messages to their target markets.

In spite of the importance of ICTs in agritourism development and production, the agritourism industry is faced with challenges which, according to Parker (2009) and Buyukbay and Gunduz (2011), include insufficient adoption of ICT, access to ICT infrastructure, high cost of ICT in general and the lack of ICT awareness and skills. Agriculture needs to offer products that are nutritional and affordable. The challenges are demanding, but within the challenges many opportunities are forthcoming. One such an opportunity is agritourism. Agritourism offers opportunities for farmers to diversify with the potential to increase profits.

Farmers in rural communities rely on accumulated experience and the support of agritourism stakeholders such as government and non-governmental organisations (NGOs) for information relating to farming products and services (Tembo, 2008). Farmers receive

information by means of newspapers, radio and television. Unfortunately, these media outlets are inadequate and provide limited information to farmers. According to Ellis (2004), it is evident that majority of farmers in rural communities still rely on traditional practices such as consulting other farmers, use of newspapers and radio to access information relevant to agritourism practices.

The use of ICT in agritourism contributes to improve communication and learning processes amongst farmers, employees, suppliers and customers involved in eco-tourism. Tembo (2008) highlights the evidence of farmers using information technologies such as computers and electronic-based mechanisms to collect, manipulate and process data automatically so as to control and manage agricultural processes. Buyukbay and Gunduz (2011:1) state that “farmers in rural communities may not be able to take part in the emerging information technology due to inadequate access to ICT infrastructure and services”. Despite the fact that ICT has been used for many decades, it is still new to agritourism farmers, especially in rural communities of Lesotho. Singh (2012) recommends that policy makers of developing countries pay attention to deploy ICT in transferring agricultural technology for the benefit of small farmers to enhance rural development.

1.2 Statement of research problem

Frempong (2008:4) mentions that agritourism is a neglected field of research, especially in the field of the relationship between information technology and agritourism. According to the author, there is no relationship between research, agritourism services and the private sector. The lack of these relationships results in poorly designed ICT offerings for the agritourism role players. Lechesa (2011) adds that the majority of people in Lesotho use ICT as a means of communication between friends and relatives. Many farmers do not have access to ICT, resulting in the ICT offerings to be difficult to use and thereby creating a challenging environment to develop agritourism as an industry.

1.3 Research aim

The aim of this research is to explore how ICT can be used by farmers in rural communities. The research also aims to contribute towards agritourism development and related studies as well as propose possible guidelines to overcome potential barriers that may inhibit the use of these technologies by farmers in rural communities.

1.4 Research objectives

The main objectives of the study are to:

1.4.1 To identify the types of ICT farmers are using in rural communities.

1.4.2 To determine the different types of information needed to successfully run an agritourism farm.

1.4.3 Identify the barriers that inhibit the use and availability of ICT by farmers in rural communities.

1.4.4 Propose guidelines for farmers to use in order to enhance agritourism development.

1.5 Assumptions

The underlying assumptions for this study are stated as follows:

- First, it is assumed that farmers in rural communities are likely to use ICT to cut cost of travelling in order to access information relevant to agritourism.
- Secondly, an assumption is made that ICT can help reduce costs and uplift the livelihoods of rural communities.

1.6 Research questions, sub-questions and objectives

The research problem, research questions and sub-questions, methodology used in answering these questions as well as the objectives of each question are given in Table 1.1

Table 1.1: Problem statement, research questions, research sub-questions, methodology and objectives of questions

Research Problem	Many farmers do not have access to ICT, resulting in the ICT offerings to be difficult to use and thereby creating a challenging environment to develop agritourism as an industry	
Research Question 1		
How can ICT be used to assist farmers with agritourism development?		
Research Sub-Questions	Research Method(s)	Objectives
1.1 What technologies do farmers in rural communities use?	Literature analysis and Interviews	To identify the types of ICT farmers are using in rural communities
1.2 What information do farmers need in order to successfully run their farms?	Literature analysis and Interviews	To determine the different types of information needed to successfully run an agritourism farm
1.3 What are the factors that influence the use of ICT in agritourism?	Literature analysis and Interview	To identify barriers that inhibit the use availability of ICT in rural communities
1.4 How can ICT be used to enhance agritourism development in rural communities?	Literature analysis and Interviews	To propose a guideline for farmers to use ICT in order to enhance agritourism development.

1.7 Research Design

According to Mouton (1996:175) research design “provides directions from the fundamental philosophical assumptions to research design as well as on data collection”. Research design involves a set of guidelines that can be followed in addressing a research problem (Creswell, 2014). Research design can also be used as a plan that describes or explains how research is to be carried out or can serve as a guideline with procedures on how research would be carried out. Research design also articulates what data is required, what methods will be used to collect data and how all of this will answer the research questions and also reflects the purpose the research is intended to achieve depending on the aim. Before embarking on the research process, the ontological foundation of the research problem should be clarified. According to Mouton (1996), this serves as a basis upon which methodological assumptions could be based upon.

1.7.1 Research philosophy

Research philosophy refers to “the development of the research background, research knowledge as well as its nature” (Saunders, Lewis & Thornhill, 2007:107). It can also be defined with the help of a research paradigm. According to Cohen, Manion and Morrison (2000), research paradigm is a framework comprising of perceptions, beliefs and understanding of theories and practices used to conduct research. A paradigm is not strictly a methodology, but a philosophy that guides the researcher on how research is supposed to be conducted. Williams (2011) adds that the combination of research philosophies and paradigms assists the researcher in developing an understanding and knowledge of the research topic. The author concludes that factors such as time and budget constraints may affect the research in terms of implementing a method in an effective way. However, through the use of an appropriate research philosophy and paradigm these factors can be eliminated.

1.7.1.1 Ontology

Research is based on underlying principles or beliefs about what constitute a valid research and which research methods are appropriate. According to Myers (1997), it is important to know the principles or beliefs before conducting or evaluating a research. The most pertinent philosophical beliefs are those relating to the underlying epistemology which guides the research. According Saunders et al. (2009), ontology refers to the reality that the researcher investigates and this reality can be subjective (subjectivism) or objective (objectivism). In this research, the reality is subjective. Having provided the problem under investigation in this study, which is to explore the social phenomena in the form of “potential use of ICT to enhance agritourism in Lesotho”, an appropriate approach for this research is the constructivist approach, which is adopted as the ontological stance.

1.7.1.2 Epistemology

The relationship between reality and the researcher is referred to as epistemology while methodology is the procedure used to investigate that reality (Healy & Perry, 2000). Epistemology refers to the assumptions or beliefs about knowledge and how it can be obtained. These assumptions underpin the research strategy and methods chosen as part of the strategy (Myers, 1997). According to Scotland (2012:9), “research paradigms are based upon their own epistemology and ontological assumptions and the philosophical underpinning of each paradigm can never be empirically proven or disproven”. Epistemological stances that can be followed are that of interpretivism or positivism

(Saunders et al. 2009). This study investigates the potential of ICT to enhance agritourism, a behavioural science phenomenon that cannot be understood through the empiricist approach. Consequently, the epistemology for this research is interpretivist.

1.7.2 Research approach

This research is interpretative in nature and employs an inductive approach in order to generate knowledge and gain understanding of specific factors impacting on the use of ICTs in agritourism and how it can be used to enhance development in Lesotho. According to Neuman (2011:88), interpretative approach refers to “the systematic analysis of socially meaningful action through direct and detailed observation of people in order to arrive at understanding and interpretations of how people create and maintain their social worlds”. Nonyane (2009) argues that interpretative research is aimed at understanding values, beliefs and meanings of the subject under investigation in order to obtain a deeper understanding of human activities as well as their experiences. The author concludes that interpretative research is not limited to human behaviour, but to an approach to investigating a research problem within its context.

1.7.3 Research methodology

The main purpose of research methodology is to provide for the collection of relevant data within minimal expenditure of effort, time and money. All this can be achieved depending on the research purpose. According to Myers (1997:1), research methodology refers to “a plan of investigation, which moves from the underlying assumption to research design and data collection.” The author further explains that there are different classifications of research modes but and the most common classification is into qualitative and quantitative.

Qualitative research is primarily exploratory research (Wyse, 2011). It is basically used to gain a better understanding of the phenomenon under investigation and provides insight into the research problem for potential quantitative research, while quantitative research is used mainly to quantify the problem by way of generating numeric data. Wyse (2011) further explains that quantitative research uses measurable data to convey facts and to uncover patterns in research. Qualitative research approach was used because by employing open-ended questions and probing, it gives participants the opportunity to respond in their own words. Another reason for choosing qualitative research approach was the researcher’s interest in exploring the views of respondents with regard to the problem under investigation.

1.7.3.1 Research strategy

Research strategy is one of the components of research methodology. According to Saunders et al. (2009), research strategy refers to a plan of how research will be conducted. It also provides the overall direction, including the process by which the research will be conducted. There are different types of research strategies. Saunders et al. (2009) states that these strategies have to be selected based on the research questions, research objectives, extent of existing knowledge on the research area, amount of time and resources available as well as philosophical underpinnings of the research.

For this research, a multiple case study strategy was employed. This was done in order to answer the main research questions pertaining to the use of ICT by farmers and employees in rural communities and barriers inhibiting the use of available technologies. Yin (2014:1) defines a case study as “an empirical enquiry that investigates a contemporary phenomenon within its real life context especially when the boundaries between phenomenon and context are not clearly evident. The intention of a case study is basically to gain an in-depth understanding of a phenomenon under investigation”.

In this research, fifteen farms in the southern region of Lesotho as well as government and tourists were selected as multiple cases.

1.7.4 Units of analysis

According to Crossman (2013:1), the units of analysis are “the major entity that the research wants to analyse in a study”. In this research, the units of analysis are the farms, tourists as a group and government officials. The units of observation are the agritourism farmers, farm employees, tourists and individuals from the Ministry of Tourism, Agriculture and Culture.

1.7.5 Sampling

In order to obtain data for this research, non-probability judgemental sampling was used to choose the units of analysis that were investigated. The study relied on personal judgement and the farms were not necessarily representative of the entire population. The sample consisted of farms involved in commercial farming and excluded subsistence farmers as they only focus on growing food and raising livestock to feed themselves. Subsistence farmers usually do not farm for commercial purposes. Individuals of the Ministry of Tourism, Environment and Culture, and individual tourists were included. The tourists were selected

based on convenience sampling as they were available and willing to participate in the study on the days the data collection happened.

1.7.6 Data collection

Interviews were used in the study, which give the researcher the opportunity to use the exact words of individual participants and refer to specific situations as implied by the interviewee. Primary and secondary sources of information were used in this research. Primary data were gathered by means of in-depth interviews using semi-structured questions in order to address the research questions. These interviews were done face-to-face with the target population. The respondents were selected based on their involvement with the phenomenon under investigation. Secondary data were collected by means of reviewing documents made available for the research. These documents included academic and non-academic books, journal articles, published dissertations, official documents of the government and magazines.

1.7.7 Data analysis

Content analysis was done to analyse the data collected from the interviews. Myers (1997: 19), states that “content analysis is used for making replicable and valid reference from data to their context”. Data collected during face-to-face interviews with the participants were recorded and transcribed in order to carry out detailed analysis. After the transcription of interviews, the data were coded by searching for specific words or meanings that were relevant to the topic. The words (keywords) were then grouped and distilled. From the keywords, categories were identified. The findings were then linked to the categories as well as the research questions. From the findings, themes were developed to give expression to the community of voice across participants.

1.8 Delineation of the research

The research was limited to farms involved in commercial farming, individual tourists visiting the farms and employees of the Ministry of Tourism, Environment and Culture in the district of Maseru. No other departments were involved. Subsistence farmers were also excluded from the study.

1.9 Contribution of the research

The significance of this research lies in practical and communicable guidelines it proposes to farmers. The proposed guidelines identify types of ICT available to farmers in rural communities for their use with the aim of contributing towards agritourism development. The research also identified factors that affect the use of these technologies in the agritourism industry. The research contributes to the body of knowledge and increases understanding on how technologies can be used by farmers to enhance agritourism.

1.10 Ethical considerations

It is important for the researcher to adhere to ethical considerations when conducting research. Creswell (2014) mentions that research cannot simply be conducted by anyone and anywhere. The research undertaken in this study was done in a manner which ensures that participants were confident their privacy and confidentiality will be protected. The research did not involve unethical behaviour and did not involve participants who were unable to give informed consent. Participants did not take part in this research without their knowledge and written consent. Permission was also sought to record the interviews, which did not involve discussion of sensitive topics or environmental studies, which could be contentious. It did not also use materials or processes that could damage the environment and the research method used did not have any negative impacts on the participants, all whom were given a brief summary of the research, data collection methods for better understanding of the research.

1.11 Conclusion

This chapter outlines the area of study and provides an overview of the research aim and objectives. The background of the research problem, problem statement and research questions are also highlighted. A subjective stance with an interpretivistic approach was followed. A multiple case study strategy was used with the units of analysis agritourism farms, government officials from the Ministry of Tourism, Environment and Culture and individual agritourists. The unit of observation was owners of agritourism farms, employees on agrifarms, government officials and individual agritourists.

In Chapter 2, the literature review is discussed providing a background for the study. Agritourism, the adoption of technologies and ICT initiatives in Lesotho are discussed. The discussion is followed with insights into the tourism area life cycle, agritourism development

in rural communities and some of the benefits of agritourism for rural communities. The role of ICT applications, barriers inhibiting ICT and other factors affecting ICT use in agritourism are also discussed. The chapter ends with a proposed theoretical framework. (Figure 2.8).

1.12 Thesis structure

This study is divided into six chapters briefly outlined as follows:

Chapter 1: Presents the introduction, background to research problem, research questions, aim and objectives of the research.

Chapter 2: Presents the literature review on agritourism, ICT initiatives in Lesotho, the role of ICT in agritourism, factors that influence the use of ICT, barriers that inhibit the use of ICT and the role of information in agritourism. The chapter also discusses the most common theories in Information System research and adopts the most appropriate theory for the study.

Chapter 3: Discusses the research design, methodologies and approaches used. Data collection methods, sampling techniques, analysis methods and ethical consideration of the study are also discussed in this chapter.

Chapter 4: Examines and presents the results from the interviews with the respondents.

Chapter 5: Presents discussion of the findings on technologies being used in agritourism, factors influencing the potential use of ICT, information farmers need in order to successfully run their farms and examines means farmers can use to enhance agritourism development in rural communities of Lesotho.

Chapter 6: Presents the conclusion and recommendations of the study based on the findings.

CHAPTER TWO

LITERATURE REVIEW

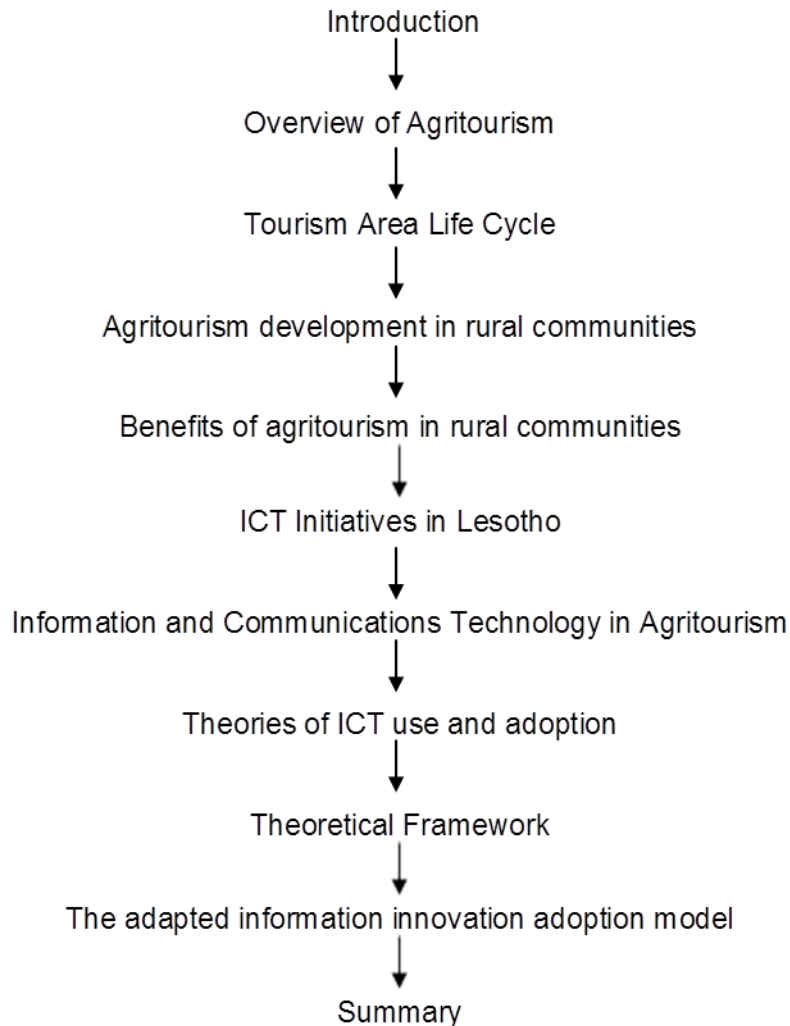


Figure 2.1: Layout of Chapter 2

2.1 Introduction

This chapter provides an overview of agritourism at an international level, in South Africa and Lesotho. It provides relevant literature on ICT initiatives in Lesotho, the importance of agritourism development in rural communities and an understanding of the significant role ICT is playing in promoting sustainability and improving the livelihoods of farmers in the agritourism sector. The chapter also acquaints readers with how ICT is applied in order to enhance development in rural areas. Discussion on the barriers that inhibit the use of ICT, benefits and factors contributing to use, challenges faced by farmers with regard to ICT as well as the conceptual frameworks for ICT use in agritourism are discussed.

2.2 Overview of agritourism

Agritourism is among the fastest growing industries in the eco-tourism sector. It is a growing division of the tourism industry that has been driven by the restructuring of the agricultural industry (Che, 2007). For example, rural policies and structural adjustment funding have enabled and assisted farmers to capitalise on historic structures that can be converted into tourism accommodation. According to Hatch (2006), the history of agritourism dates back to the late 1800s when people left cities and went to farms to visit their relatives for short periods of time. It became easier for people to travel to rural areas after the invention of motor vehicles in the 1920s. Hatch (2006) further explains that the Great Depression and World War II also gave rise to the first significant interest in rural development in the 1960s. For example, from the 1970s, horseback riding and farm petting zoos became popular. In the 1980s and 1990s, farm vacations, overnight stays at bed and breakfast facilities as well as commercial farm tours became popular. Today, the demand for agritourism continues to grow.

Definitions of 'agritourism' differ from author to author. There are many interchangeable terms used to define the industry, which also leads to confusion in the agritourism industry. Havlicek, Lohr and Benda (2011:45) define agritourism "as a specific form of local tourism that involves tourists staying on a farm and engaging in daily agricultural activities and learning of the traditional rural activities that take place on the farm which include: horseback riding, winery tours, agricultural exhibits, exotic farm animals, farmers markets, fishing, garden tours, free hunting and on-farm sales". According to Porcaro (2009:2), agritourism refers to "activities of hospitality performed by agricultural entrepreneurs and their family members that must remain connected and complementary to farm activities". For Porcaro (2009), agritourism can also be categorised as a business or activity that allows tourists to come on-farm or into a rural community to enjoy agriculture, its produce and the natural environment in which it exists.

'Rural tourism' and 'agritourism' are terms that are used interchangeably, but they are said to be interdependent as agritourism is seen as part of the overall concept of rural tourism (Hegarty & Przeborska, 2005). In this study, the researcher agrees that agritourism also forms a part of rural tourism. However, for the purpose of consistency, 'agritourism' is used.

2.2.1 International Agritourism

Agritourism varies from one country to the other and is pursued for different reasons (Viljoen & Tlabela, 2007). According to these authors, the reasons include promotion of tourism as a growth activity such as regeneration or diversifying of a remote agricultural area into adventure or cultural tourism. In support of Page and Gertz (1997), Van Niekerk (2013) agrees that agritourism is not a new concept and has been around for many years in parts of Europe. van Niekerk (2013) further explains that agritourism in Europe is one of the fastest growing sectors in the tourism industry. Fogarty (2014) concur that European agritourism is very popular on an international level. According to Dettori, Paba and Pulina (2004) the growing interest towards agritourism in Europe has led to an increase in the demand and supply of infrastructure and services.

Porcaro (2009) mentions that a country such as Italy has well-crafted agritourism and its agritourism products and services are well known throughout Europe. The author declares that the term 'agritourism' in Italy is understood by agritourists and they have a clear picture of the type of holiday available to them. Furthermore, the author adds that the most significant feature of the Italian system that strengthens the successful development of agritourism is the funding available from government to farmers for commercial agricultural ventures. Agritourism operators in Italy also undergo training before a permit is issued to start an agritourism venture and their training consist of topics such as theory and attitude of agritourism, hygiene and safety, communication skills (which include internet technology) as well as marketing (Porcaro, 2009).

Dettori et al. (2004) state that agritourism is also well-developed in France and dates back to 1951. This supports the fact that agritourism is a not a new concept and has been around for decades even though it was called by different names such as adventure tourism, rural tourism, social tourism, ecotourism, cultural and farm tourism. According to Viljoen and Tlabela (2007), the most popular forms of agritourism accommodation in France are camping and caravans. Farmers in France develop camping sites on their farms and prefer to invest in short-term rental houses. Dettori et al. (2004) state that agritourism in France also plays a major role within the agricultural sector and is mainly practised by women farmers, who are encouraged to enrol in a commercial register in order to guarantee a fair competition and consumers' right.

The growing interest for rural life has also been observed in other countries such as Indonesia. According to Viljoen and Tlabela (2007), agritourism in Indonesia has been

developed mainly in the plantation area. Agritourists in this country stay in hotels, but visit agritourism farms in order to see activities such as rice plantation or rubber tapping. The authors conclude that agritourism projects in Indonesia have been developed predominantly by state enterprises. In Great Britain, agritourism was developed in 1970 and is regarded as an instrument to protect the rural environment in the country (Viljoen & Tlabela, 2007). The authors further state that the private and public sectors in Great Britain have planned and delivered a supply of accommodation and infrastructure in order to fulfil the needs of agritourists.

Like in Europe, Tew and Barbieri (2012) claim that agritourism in the United States of America has also increased in popularity along with its economic importance during the past decade. According to Bernardo, Valentin and Leatherman (2004), agritourism appeals to many Americans and approximately 62 percent of all citizens take trips to the rural areas. Barbieri and Mshenga (2008) support this by mentioning that due to change of lifestyle in the US, urban citizens escape city life by seeking farm experience that is perceived as being relaxing. Bernardo et al. (2004) further explain that agritourism is a major segment of the US economy and about one-third of US farm businesses are engaged in non-traditional agritourism enterprises. Carpio, Wohlgenant and Boonsaeng (2008) state that there are several factors that increase demand for agritourism in the US. These include the rise in demand for outdoor recreation in general and citizens looking for more activities that involve recreational experiences. Viljoen and Tlabela (2007) state that agritourism in South Africa is viewed as a means of eliminating poverty and creating employment opportunities in rural communities.

2.2.2 Agritourism in South Africa

According to van Niekerk (2013), agritourism is a new concept in South Africa compared to international countries and there is limited research done on agritourism in South Africa. Meyer and De Crom (2013) agree that agritourism is a recent phenomenon that is not being used to its full potential. They further state that there is a lack of awareness and not enough has been done in order to promote agritourism in South Africa.

Figure 2.2 was developed by Viljoen and Tlabela in 2007 to illustrate the positioning of agritourism in the overall tourism industry within the South African context. According Viljoen and Tlabela (2007), the rural tourism fields that are indicated in Figure 2.2 can also be

included in the special interest or mass tourism field, but for the sake of this research have been placed under rural tourism.

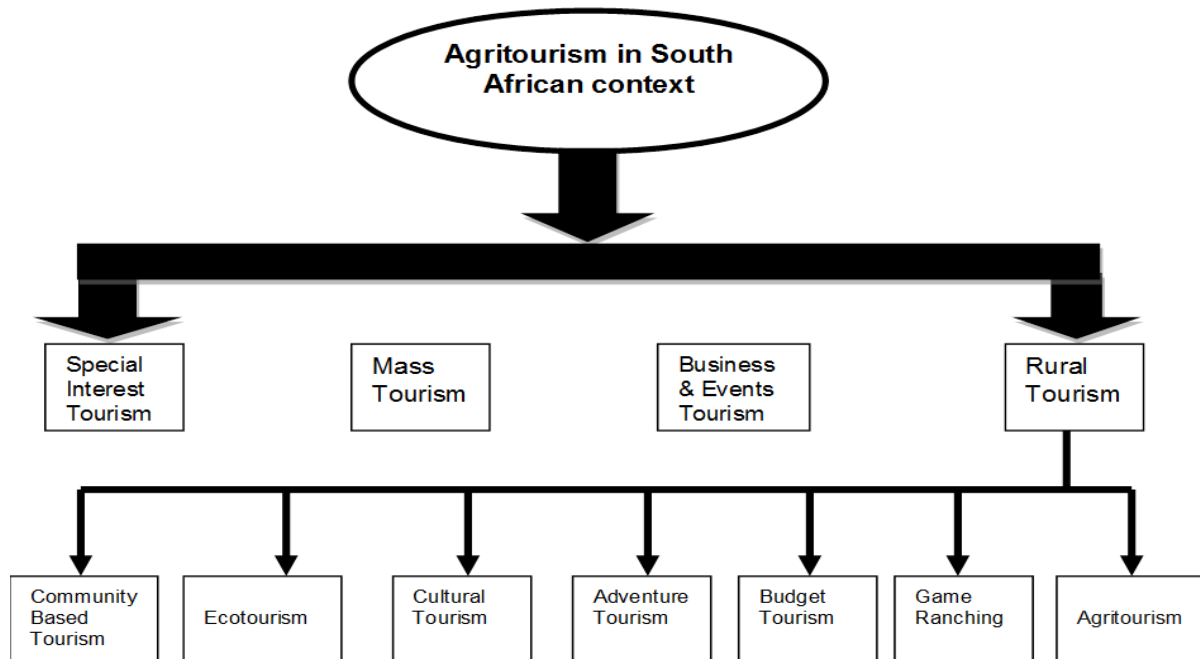


Figure 2.2: Position of agritourism in the South African context

Source: Viljoen and Tlabela (2007:42)

As mentioned earlier, agritourism in South Africa is not well documented, and according to van Niekerk (2013), limited research on agritourism has been done mostly in the Western Cape. Mnguni (2010) states that the rural economy of South Africa is primarily agricultural and growing gradually. This is possibly because farmers in rural communities receive limited information regarding agriculture. Mnguni (2010) concludes that agritourism can be used as a strategy to improve the economic status of rural economy.

Rogerson and Rogerson (2014) mention that agritourism investigation in South Africa relates to the establishment and growth of the wine industry and wine routes in the Western Cape, which have given rise to the development of new agritourism enterprises in the province. The South African wine industry is one of the oldest outside Europe, and according to van Niekerk (2013), the development of wine routes in South Africa plays an important part in the wine tourism industry.

Wine tourism is one of the fastest growing sectors in the global tourism market. Van Niekerk (2013) states that wine tourism is better documented than many other forms of agritourism activities in South Africa. Kirkman (2010) states that wine tourism in South Africa serves as one of the primary agricultural sectors and ranks eighth in overall wine production in the

world. Nakana (2009:60) defines wine tourism as “travel related to the appeal of wineries and wine country, a form of niche marketing and destination development as well as an opportunity for direct sales and marketing on the part of the wine industry”.

The South African wine tourism industry is regarded as one of the best developed in the world (Kirkman, Strydom & van Zyl, 2014). Tembo (2008) indicates that the wine industry dates back to 1655 and the Western Cape wine industry has prospered among commercial farming sectors because of favourable climatic and soil conditions in the province. According to Kirkman et al. (2014), the majority of South African vineyards are situated in the Western Cape, serve as an economic generator and are able to increase the value of the primary agricultural product and generate income indirectly through wine tourism. Wine tourism industries are located in rural areas and play a significant role in the livelihoods of the people of the Western Cape (Nakana, 2009). The author concludes that wine tourism in South Africa is successful in attracting wine-focused tourists who actually purchase wine products during their visit to the wine routes estates (Nakana, 2009).

2.2.3 Agritourism in Lesotho

Lesotho is a country that is bordered by the Republic of South Africa (Tregurtha, 2012). The author further explains that the population of Lesotho is approximately 2,067,000 and 58 percent of the population live below the poverty line. Figure 2.3 shows the position of Lesotho in relation to South Africa. Although the country is located in the middle of the largest and most sophisticated economy on the African continent, Tregurtha (2012) mentions that Lesotho has not yet fully escaped poverty. Instead, it serves as a labour reservoir for South African mines and industries.

Lesotho gets its foreign exchange earnings from South Africa and through exportation of garments, diamonds, wool and mohair (Anon, 2012). The country is also faced with challenges that consist of low economic growth, poor agricultural productivity, low wages, limited industrial skills, poor physical infrastructure and high cost for cross-border logistics. These challenges have led to an unhealthy dependence on South Africa and external assistance for employment, income and high level institutions for education and research.



Figure 2.3: Map of Lesotho
Source: King and Brad (2008:1)

Lesotho is divided into four main agro-ecological zones, namely:

1. The lowlands in the west, which lie between altitudes 1500 m and 1830 m. This zone is said to occupy about 15% of the country.
2. The foothills, situated in the middle between 1830 m and 2130 m occupying about 8% of the land.
3. The Orange River Valley lies between 1500 m and 2250 m. The area covers approximately 11% of the country.
4. The Mountain range covers 66% of the total land. It lies between 2130 m and 3480 m altitude, is the heart of Lesotho's rangelands and sparsely populated, especially the lowlands. It is evident that this is changing because of increased population pressure (Anon, 2012).

The relationship between agriculture and tourism is important and both sectors contribute to the development of the economy (Frempong, 2008). The author mentions the agricultural resource landscape in Lesotho as being affected by a number of climatic variances, which

include heavy rainfall and drought. The dramatic climatic variances lead to insufficient arable land in rural communities, poor soil fertility and weakening the subsistence farming. Mafisa (2013) indicates that rainfall in Lesotho is on average 753 mm per year and falls in the warmer months of October to March. Temperatures differ dramatically from one season to the other, rising up to 35°C in summer and dropping to as low as -12.5° C in the mountain regions during the winter season.

As in South Africa, agritourism in Lesotho is also not well documented. The reason for this is the fact that agritourism is still a new concept in Lesotho. Limited information can be found regarding agritourism in Lesotho. Based on the Tourism Area Life Cycle (TALC, Figure 2.4), tourism in Lesotho is still in its exploration stage compared to South Africa. According to Mochebelele (2009), the tourism industry in Lesotho comprises a mix of interrelated service providers which include accommodation and hospitality providers, travel agencies, tour operators, public sector organisations and other stakeholders such as insurance and car hire companies. Mochebelele (2009) concludes that these stakeholders are expected to work together in order to promote the tourism industry and bring both local and international tourists to their destination of their choice. McKeeman and Rozga (2007) highlight the poor quality of tourism products and services, lack of knowledge and limitation of product supply as some of the challenges for the country in seeking to develop the tourism industry. Since Lesotho is constituted mainly by the rural areas, the majority of communities rely on agritourism as the main source of household income contributing towards the nation's Gross Domestic Product (GDP).

Tembo (2008) states that agriculture is faced with a number of challenges that impact farmers' ability to obtain income from the land. As in any other sector, the contribution of agriculture to the development of the country's economy depends on the generation, delivery and adoption of new technologies. According to Thomas and Callahan (2002), agritourism operators do not capitalise on the advantages that ICT tools offer and this can have a negative impact on the productivity of the industry. ICT in Lesotho is significantly limited with internet penetration of 4.4% (Mapeshoane & Pather, 2012). The awareness of and continuous access to information, remain the main requirements for rural development to agritourism farms in rural communities. Bertin (2009) argues that the relationship between agriculture and tourism can be strengthened by increasing access of small-scale producers through the use of better-quality information technologies in order to realise a more reasonable distribution of the economic benefits of tourism-related activities.

2.3 Tourism Area Life Cycle

According Mnguni (2010:21) the Tourism Area Life Cycle (TALC) is “a geographical tool that representing a series of stages in a normally long period of time for monitoring a number of areas of knowledge”. TALC is used in an attempt to describe and understand the process of the development of tourist destinations in a wide range of settings (Butler, 2011).

Andriotis (2001) mentions that researchers attempted to illustrate different stages of tourism destination evolution through the concept of the life cycle, but until now Butler’s 1980 hypothetical model is the generally accepted model. Hidalgo (2012) agrees that Butler’s 1980 TALC model has survived three periods of continuous scrutiny and verification studies and is still considered as a foundation in the analysis of tourism destination development and a milestone in tourism academic literature.

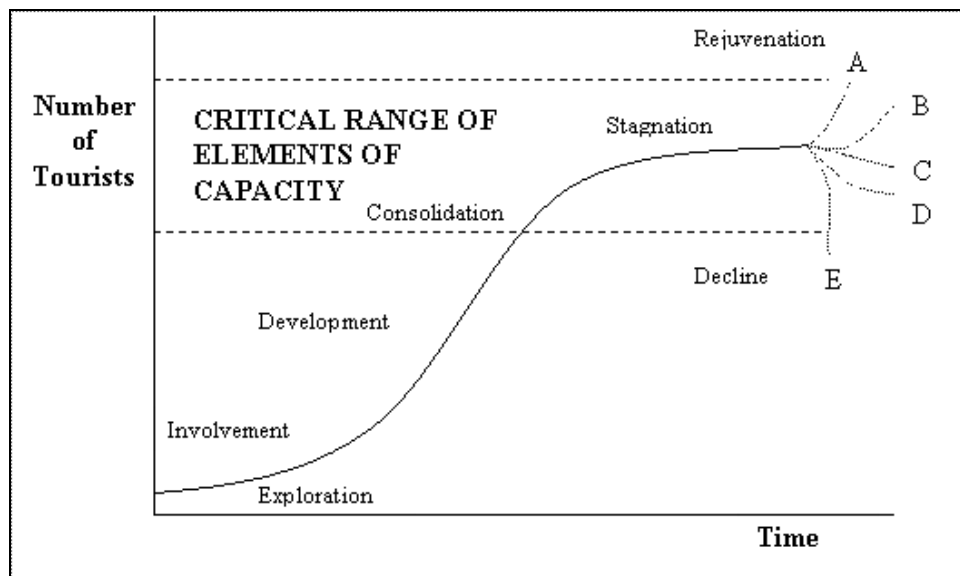


Figure 2.4: Hypothetical evolution of a tourist area life cycle

Source: Miller and Gallucci (2004:4)

Agritourism destinations go through the same evolution to that of other products, but consumers are substituted for tangible product sales (Mnguni, 2010; George, 2004). George (2004) states that Butler categorised the stages of TALC in terms of tourism destination development: exploration, involvement, development, consolidation, stagnation, decline, rejuvenation. Figure 2.4 illustrates the different stages of tourism development. Casasnovas and Rosello (2009) state that each stage is characterised by a different time of growth, change of attitude and composition of the main actors which, include: tourists, local entrepreneurs, local communities and immigrants and the difference of the main attractions

either original or human made. The various stages of tourism destination development are briefly described in the following section.

2.3.1 Exploration Stage

In the exploration stage, a small number of tourists visit the destination. According to Mnguni (2010), the agritourism sector should also expect a small number of tourists visiting their farms due to the fact that the farm is still new and not popular to tourists. Usually, a small number of adventurous tourists attracted to natural and cultural features will use agritourism facilities. All the agritourism offerings in this stage are assumed to be imperfect due to lack of knowledge as well as facilities.

2.3.2 Involvement stage

The transition from exploration to development stage is influenced by a number of factors which include: entrepreneurial activity, word of mouth recommendations and events (George, 2004) as the number of visitors increases and the agritourism sector starts to provide facilities and accommodation to tourists. Although the potential of agritourism is recognised at this stage, a lot of marketing is undertaken which further leads to increase in number of tourists. As a result of the growing number of tourists visiting the farms, there is also sufficient tourism revenue to justify improvements and the provision of infrastructure.

2.3.3 Development Stage

As the agritourism industry advances to the development stage of the tourism life cycle, its destinations transform from being relatively unknown, quiet or undiscovered into fully developed destinations. Their appearance changes as new facilities are built and developed. Farmers no longer have control over their products and services as external companies enter to finance agritourism-related projects. Example: Agricultural land is replaced by golf courses and theme parks. George (2004) indicates that there may be signs of previous overuse, hampering and vandalising of vegetation and other agritourism facilities.

2.3.4 Consolidation

According to George (2004), the number of tourist visiting farms drops during this stage. The agritourism industry loses its exclusiveness and uniqueness. However, during the peak season more tourists stay in these destinations and outnumber local people. Normally, locals blame tourists for all the environmental problems.

2.3.5 Stagnation

This is a stage in which saturation is reached and agritourism falls out of fashion as organised mass tourists are the primary customers and artificial facilities supplant authentic experiences (George, 2004). The author concludes that at this stage less attention is paid to upkeep of agritourism infrastructure and decline in growth results in a lack of investment. Mnguni (2010) concur that it is at this stage the agritourism business is no longer generating enough profit as in the development stage because there is a stable demand for tourism offerings.

2.3.6 Decline

After stagnation, a possible route indicated by dotted lines (6a-6e) is possible outcomes beyond stagnation stage. George (2004) states that characteristics of this stage are similar to those of the traditional Product Life Cycle (PLC) as the destination loses visitors to the more exciting competition. In terms of agritourism, repeat visits by tourists are no longer satisfied with the available products and services and new competitors emerge. The industry depends on day or weekend visitors and agritourism developments and facilities may be converted into other businesses such as retirement homes.

2.3.7 Rejuvenation

Tourism destinations differ from consumer products in that they have a chance of being rejuvenated (George, 2004). In this stage agritourism will require a proactive strategy with public and private operation. At the rejuvenation stage, agritourism marketers have two options for reviving tourism offerings, they either lead with the offering or with the market. Agritourism can update offering and make efforts to re-market based on improvements or introduce products to new markets and consumers.

2.4 Agritourism development in rural communities

There is a huge potential for agritourism development in rural communities that may sustain the rural economy. However, this potential is overlooked. Mnguni (2010) notes that agritourism increases the demand for travel experiences, especially in the rural communities and marketplace where tourists learn about agricultural landscape. However, agritourism in Lesotho is still in its exploration stage of the TALC and the opportunities that agritourism presents have not yet been fully recognised. This is because lack of resources for farmers in rural communities.

Rural community life could be of high standard if agritourism is developed by farmers, as well as introduction and development of better methods (Mnguni, 2010). According to Dossa, Dumais, Paridaen and William (2001) agritourism can be a vehicle for diversifying and establishing economies for rural communities by: creating jobs and increasing community income, providing a broader market-base for local farms, and attracting other businesses and small industries. The authors further observe that agritourism can also be a means of diversifying the mix of tourism offerings available to visitors and position rural communities uniquely for market share.

Inusa (2006) highlights the importance of finding ways to make rural communities viable. The author further states that there is a need for policies and strategies which can create opportunities for development in rural communities. Government, private sector and other non-governmental organisations need to recognise the important role rural communities' play, especially in the agritourism sector, in determining social and economic benefits in developing countries. Inusa (2006) notes that it is important to provide the tourism industry, especially the agritourism sector where majority of communities rely on agritourism as the main source of household income, with a practical and communicable framework which identifies the different types of information communication technologies that are available for them to use in daily business operations and factors that inhibit the use of these technologies in their projects.

2.5 Benefits of agritourism development in rural community

Well-developed agritourism in rural communities has the potential to overturn negative economic impacts by bringing in visitors, creating new jobs and local ventures for rural communities (Ramsey & Schaumleffel, 2006). According to Dossa et al. (2001), the potential and benefits associated with developing the agritourism sector is extending. The authors

further explain that these benefits can also be linked to individual farmers, local communities as well as the tourism industry as a whole.

The following are some of the benefits of developing agritourism (Van Niekerk, 2013:45).

1. generation of secondary income for farmers;
2. development of new consumer markets and increasing awareness to local agritourism products;
3. preserving the virtual and maintaining the agricultural landscape;
4. development will also help in attracting other businesses and small industries;
5. making provision for certain infrastructure;
6. helping educate consumers and tourists about farming and rural heritage of the region;
7. enhancing the rural identity of communities and emphasising the importance of agritourism in local communities; and
8. helping create name recognition for their agritourism products and services

2.6 ICT initiatives in Lesotho

Isaacs (2007) states that Lesotho has taken the necessary steps in order to promote levels of ICT accessibility and use in its communities despite its poor ICT infrastructure and high level of poverty. Tjokotsi (2012) adds that the Ministry of Communication, Science and Technology (MCST) is responsible for ICT development, broadcasting, media, postal services and science and technology in the country, with the aim of increasing radio, television as well as mobile coverage, the number of internet users in the country, fixed telephone and promotion of IT.

2.6.1 Infrastructure

Lesotho has a severely underdeveloped infrastructure. Table 2.1 provides an overview of the country's ICT infrastructure indicators.

Table 2.1: ICT Infrastructure Indicators
Source: Isaacs (2007:4)

Fixed lines	48,000 (2005)
Cellular	245,100 (2005)
Radio broadcast stations	AM 1, FM 2, shortwave 1 (1998)
Television broadcast stations	1 (2000)
Internet hosts	168 (2006)
Internet users	43,000 (2005)

The Ministry of Communication, Science and Technology has formulated an ICT policy that provides the nation with a vision and strategy for becoming a fully integrated member of the information society (Mochebelele, 2009). Mochebelele further explains that the policy intends to unite government, industry, civil society and the public in general in order to achieve its national development goal.

Less than 15% of the country's population own a computer or has Internet access. Only 8% own a telephone and few have access to electricity. Those with access to ICT do not fully understand how to use them. The country's GDP also inhibits the ability of the industry, institutions and individuals to invest in and make use of ICT. The ICT policy also provides direction as to how proposed technologies could be utilised to open new opportunities, improve service delivery and help eradicate poverty (Mochebelele, 2009).

2.6.2 e- Government

e-Government is defined as "the delivery of government related information and services to the public online through the internet or other digital devices such as area networks, fixed and mobile networks, kiosks" (Nkwe, 2012:40). Mochebelele (2009) observes that the use of ICT to deliver government information and services in Lesotho plays an important role in improving service delivery to the public, empowers citizens and increases their participation in the political process.

The report also highlights that ICT use in government reduces costs of government through efficient management. The government of Lesotho is committed to using ICT infrastructure to improve quality, accessibility as well as provision of services to the public. Nkwe (2012) notes that the benefits of using e-Government include cost reduction, transparency, increased capacity of government, creation of networks and community, improved quality of decision making as well as promotion of ICT in other sectors of the society.

2.6.3 e-Agriculture

ICT has been recognised in agricultural productivity and, in this regard, advances in technologies are considered the main sources of growth in land and labour productivity (Pote, 2008; Yalcin, 2009). Most farming in Lesotho takes place in remote areas that are distant from major towns where IT is not freely and easily accessible. Sachs (2011) mentions that agricultural business located in rural communities are also faced with challenges such as accessibility of ICT infrastructure which may inhibit the use of ICT by farmers. A possible result is that agricultural information needed to ensure productivity and security does not reach farmers in the rural areas. Farmers in the country make great efforts in order to obtain information regarding farming practices. Okello, Kirui, Njiraini and Gitonga (2012) add that it is a need for farmers to know how much they are being charged for their products and how much they have to charge their customers. This information has to be accurate and timely to ensure the quality of agritourism products. Farmers in rural communities also rely on sources such as suppliers, produce buyers, non-governmental organisations willing to assist in poverty reduction and other farmers in the area.

ICT has the potential to change the management of the agricultural sector as well as improve food security. Mochebelele (2009) states that “Lesotho Vision 2020” has identified increase in agricultural productivity and sustainable food security as one of the country’s main challenge. The government of Lesotho believes that ICT can to improve food security by improving communication among producers and consumers and providing access to information. ICT can help in improving crop planning, monitoring and forecasting. It can also be used to track and locate livestock throughout the country as well as prevent theft and control diseases.

Isaacs (2007) notes that the Faculty of Agriculture of the University of Milan has volunteered to provide training to the staff of the Resource Centre in Mahobong, which is run by the Ministry of Agriculture and Food Security (MAFS), to provide support to farmers in detecting plant diseases and parasites through the provision of e-phytopathology and parasitology services. This project aims to provide agricultural tools as well as seeds and fertilisers to farmers.

2.6.4 e-Tourism

Khanchouch (2005:1) mentions that “e-tourism refers to e-business in the field of travel and tourism”. The definition of e-tourism differs from author to author. Buhalis and Law

(2008:610) define e-tourism as “ICTs in tourism”, while Khanchouch (2005:1) defines e-tourism as “the utilisation of ICT to enable tourism providers and destinations to operate more efficiently, reach and serves consumers more effectively with facilities to search, compare as well as booking tourism offerings through electronic medium”. Buhalis and Deimezi (2004) claim e-tourism reflects the digitalisation of all processes and value chain in the tourism industry. The authors further state that e-tourism has emerged as a term that describes a range of ICT applications on tourism.

Buhalis and Deimezi (2004:107) state that “e-tourism emerged as a way forward for destinations and businesses across the world on different levels”. The author further mentions that the tactical level includes e-commerce and ICT for maximising the internal efficiency and effectiveness of tourism companies. At the strategic level, e-tourism revolutionises all business processes, which include the entire value chain and relationships of tourism businesses with their stakeholders.

The government of Lesotho also has a policy for e-tourism that aims to facilitate the tourism industry’s growth by connecting potential tourist centres to ICT infrastructure (Mochebelele, 2009). The policy also encourages ICT use to market the country, support conservation of the environment and natural resources and also promote collaboration among stakeholders in the tourism industry. ICT helps to enhance service delivery and marketing in the tourism industry by using ICT, consumers are able to conduct transactions at lower cost.

2.6.5 e-Commerce

e-Commerce plays an important role by allowing the flow of information through the internet on a global basis without any barriers (Maswera, Dawson & Edwards, 2008). Maswera et al. (2008) further explain that the internet allows businesses to reach their target market and promote their products and services globally. e-Commerce refers to “the process of buying, selling and exchanging products and services or information through the computer networks and the internet”. (Award, 2004:2).

2.7 Information and Communications Technology (ICT)

ICT is the technology required for processing information. This term is similar to IT and can be used interchangeably, but its main focus is on communication technologies which include the internet, wireless networks, cellphones and other different types of communication media (Abba & Womboh, 2008). According to Singh (2012:2), ICT “is a complex term incorporating

three main technologies and in order to understand ICT one must also understand the three concepts which include information management technology, communication technology as well as computer technology". These technologies are useful in processing, exchanging and managing information and knowledge. Tembo, Simbanegavi and Owei (2010:4) define ICT as "a specific type or sub-group of current technologies that consists of hardware, software, networks and media that facilitate the collection of data, storage, processing, transmission, retrieval, presentation as well as communication of information through the use of electronic medium".

2.7.1 The role of ICT applications in agritourism development

According to Buhalis and Deimezi (2004), the emergence of new technology has changed the way in which tourism companies perform their daily business operations. e-Tourism is transforming the international tourism industry in a way that people now prefer searching for relevant information regarding tourism destinations and offerings on the internet (Banglocq, 2012). Moustafa (2011) highlights the internet as the most recent medium for e-Commerce and has recently become a household domestic because of its widespread uses, especially after the development of broadband services that have facilitated easy, fast and low-cost access to the internet.

The role of ICT has been recognised in agricultural productivity and, in this regard, advances in technologies are considered the main sources of growth in land and labour productivity (Pote, 2008; Yalcin, 2009). ICT strengthens the role of agritourism by allowing access to relevant information that may have effect on the contribution of sales and profits. Lawrence (2009) also states that ICT has changed the nature of business transactions between consumers and suppliers of goods and services. IT-enabled services are useful in improving the capacity and livelihoods of the agritourism industry (Arker, 2009). For example, mobile cellphones have significantly reduced production and communication costs and provided new opportunities for agritourism stakeholders in exchanging relevant information through short messages.

Moustafa (2011) mentions that ICT has changed tourism business practices, strategies and also transformed tourism globally. For example, through the establishment of Central Reservation Systems (CRS) and development of the internet, tourism consumers are now able to search, book and purchase tourism offerings on the internet. The author further

states that ICT has also led to the development of different tools and services that facilitate global interaction between tourism providers and their customers.

Mtenga, Dulle, Malekani and Chaila (2014), state that information is important in the agritourism sector and farmers need this information to pursue their daily agritourism activities. According to May, Karugia and Ndokweni (2007), ICT allows access to information at any time and may assist farmers to overcome some of the potential barriers that hinder the use of these technologies in the agritourism sector.

2.7.2 Barriers inhibiting ICT use in agritourism

Despite the importance of technologies for business, Stiakakis and Georgiadis (2009) identify the insufficiency of ICT use by tourism businesses as a barrier to equal opportunities to commercial activities. For example, businesses that do not have access to the internet and other related technologies, may not benefit from electronic services that are offered and may not be able to compete at an international level. Parker (2009) identifies the insufficient adoption, high cost of ICT, lack of skills and awareness as barriers to ICT use. Tembo (2008) mentions that despite efforts to encourage ICT use, the majority of businesses in developing countries still have no or limited access to ICT tools and this highlights the digital divide between countries. ICT use in developed countries remains higher than those in developing countries. Other barriers that may inhibit ICT use in developing countries include: poor ICT infrastructure. Mokaya and Njuguna (2012) state that connectivity to mobile devices, slow internet connection and electricity hinders the growth of agritourism industry in rural communities.

Tembo (2008) identifies training as one of the barriers that hinders the use of ICT. Omar, Abu-Bakar, Jais and Shalloof (2012) agree that the lack of training of farmers on topics such as ICT, finance and marketing can also hinder the development of agritourism development in rural communities. According to Owano (1988), there is a need for farmers in rural communities to be educated as well as provided with training courses on how to use ICT. Other barriers include: limited knowledge to available technologies, lack of ICT access, high cost of access and maintenance, lack of confidence in the benefits of e-Commerce (Tembo, 2008). Although ICT has a potential for agritourism development, the majority of farmers have not recognised its full power and benefits from using it. Franklyn and Tukur (2012) mention that farmers are still sceptical about the value that technology offers in as far as it is seen as a possible fraud tool.

2.7.3 Factors affecting ICT use in agritourism

A number of factors influence the use of ICT by farmers in the agritourism sector. According to Tembo (2008), these consist of the type of farm, farmers and farm characteristics, farmers' goals and community culture. These factors have a direct and indirect relationship and can influence the use of ICT either positively or negatively. Woodburn, Ortmann and Levin (1994) list characteristics of the farmer such as education, age, off-farm work, farm size and gender as important.

Education has a positive relationship with ICT use and it is a very strong factor in differentiating the level of ICT use. Less educated farmers are less likely to acquire information using ICT (Sabuhoro & Wunsch, 2003). These authors also highlight that the probability of ICT use is likely to increase if the farmer is female. This depends on the geographical context. In most African countries, women are not yet as fully emancipated as their Western counterparts and are expected to stay at home. Therefore, men have more and easier access to ICT and more readily adopt technology.

Alvarez and Nuthall (2006) agree that farmers with off-farm income are more likely to use ICT than those in full-time farming. The probability of ICT use is expected to increase if the farmer has off-farm employment. Alvarez and Nuthall (2006) indicate that the age of the farmers affect the use of ICT and the probability of ICT use decreases with increasing age. The younger farmers are more likely to use ICT. Alampay (2006) notes that farms that are located close to the centres of development are expected to have greater access and use for ICT than those further. The size of the farm has a positive relationship with ICT uptake. Larger farms tend to be earlier users of technology than smaller farms (Tembo, 2008). Alampay (2006) further states that factors such as the lack of ICT training, high technology costs, technical know-how and education affect ICT use negatively. The higher these barriers are, the less the probability of ICT use.

Farming experience also has a positive relationship with ICT use by farmers. Alvarez and Nuthall (2006) state that farmers with experience in farming tend to use ICT more than those with less experience. The authors indicate that farmers with less income are often the ones with the least access to ICT. The higher the income levels, the higher the probabilities of ICT use. Tembo (2008) also observes that a large household size is associated with a positive influence on ICT use than a smaller household. Positive attitude towards ICT generates positive effects on the use. For example, farmers who make use of ICT for keeping financial

and production records are more likely to evaluate ICT as a useful tool than those who do not use ICT.

2.8 Theories of ICT use and adoption

Internet technology contributes significantly in the everyday life of people and is rapidly becoming visible in society and agricultural practices (Chong, Shafaghi, Woolaston & Lui, 2010). There are a number of theoretical models that attempt to guide farmers who wish to use a practical approach towards information and technology for business operations and other activities. Other models attempt to explain the relationship between the user's attitudes and beliefs towards the use of technology.

These theoretical models include the Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM) (Althunibat, Zain & Sahari, 2011) and the Information Innovation Adoption model by Alvarez and Nuthall (2006). Park (2009) states that among these models, TAM is said to be the most commonly accepted model because it explains and predicts users' behaviour of IT. The author concludes that TAM is considered an influential extension of Theory of Reasoned Action (TRA), presented in Figure 2.5.

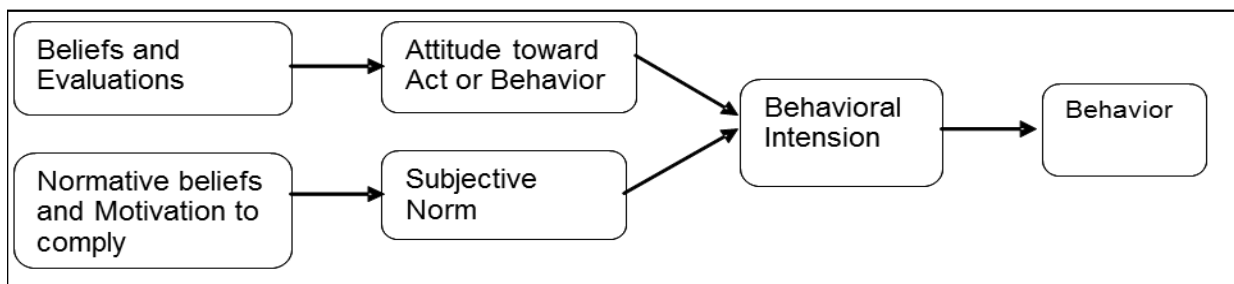


Figure 2.5: Theory of Reasoned Action

Source: Davis (1989:984)

TAM is an adaptation of the Theory of Reasoned Action (TRA) to the field of Information Systems. TAM suggests that perceived usefulness and perceived ease of use determine an individual's intention to use a system, with intention to use serving as a mediator of actual system use. Perceived usefulness is also seen as being directly impacted by perceived ease of use.

The purpose of TAM is to provide a basis for tracing the impacts of external variables on internal beliefs, attitudes and intentions. TAM has been applied in studies to test user acceptance of IT. According to Masrom (2007), the use of ICT is considered as a system that uses the internet in accomplishing its mission of delivering information to and interacting with potential customers through the electronic medium.

Althunibat et al. (2011:2) state that “TAM has introduced two important concepts being, the Perceived Usefulness (PU) and Perceived Ease of Use (PEOU)”. PU refers to the degree to which an individual believes that using a particular system would enhance job performance, while PEOU refers to the degree to which an individual believes that use of particular system would be free of physical and hard labour. In TAM individual beliefs determines the attitude towards using the system and in turn, the attitude helps to develop the intention to use.

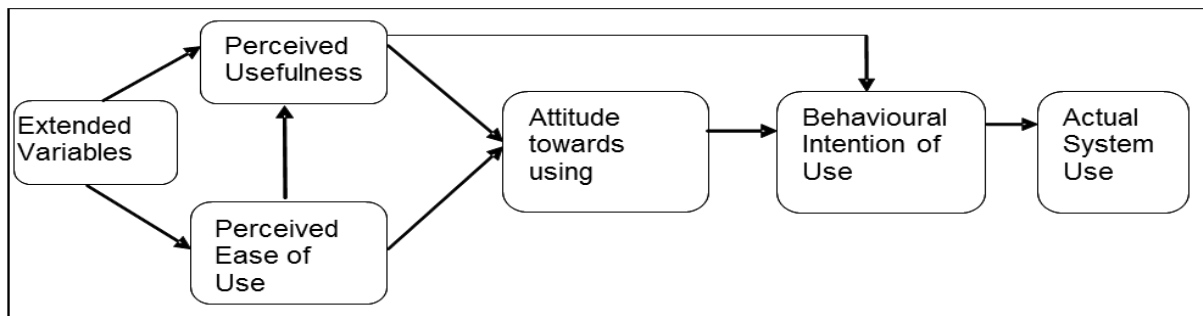


Figure 2.6: Framework of Technology Acceptance Model

Source: Davis (1989:985)

2.9 Theoretical framework underpinning the study

Since the study focuses on investigating the potential use of ICT by farmers, it adapts the Information Innovation Adoption Model (IIAM) of Alvarez and Nuthall (2006) to explain the behaviour of farmers and employees with regards to ICT use. Alvarez and Nuthall (2006) use two farming communities (Canterbury, New Zealand and Florida, Uruguay) to develop the model (IIMA) that explains the uptake and use of computers with the objective of gaining a better understanding of the processing. The IIAM uses information from both users and non-users of ICT. According to Alvarez and Nuthall (2006), the views and information from non-users of ICT are critical to improving effective adoption and use of ICT by farmers. The summarised factors that influence the uptake of ICT are follows:

1. Farmers characteristics (age, experience, personality, education)
2. Community culture (network, associations)
3. Farm characteristics (size, type, geography)
4. Goals and objectives (attitude towards learning)
5. Decision making and information management style (time, information sources, number, intensity in use, extension usage, support from the outside)
6. Other elements: trust

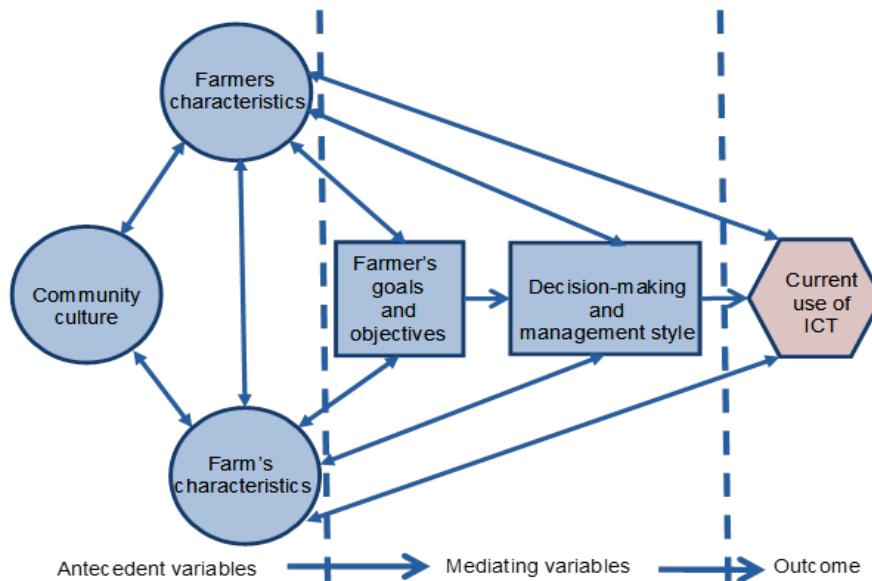


Figure 2.7: Information innovation adoption model

Source: Alvarez and Nuthall (2006:51)

Based on Figure 2.7, there is a probability that farmers will keep searching for information until they feel that the cost incurred by continuing the search exceeds the benefits that can be secured by the information attained (Rajkai, 2010:31). The IIAM shows that the use of technology by farmers relies on three types of variables but the relationship among these variables is not a simple and direct one. The first group of variables consists of antecedent variables that are indicated by circles in Figure 2.7. In this model, the antecedent variables include characteristics of a farmer such as age, income, personality and formal education; farm characteristics such as farm size and crops grown on the farm and community culture, which involves values, ideas as well as principles that were shared by the farming community when farmers were still young and developed their thinking (Alvarez & Nuthall, 2006).

The second type of variables consists of mediating variables (which consist of coping style of farmers, use of ICT in decision making, information management style, goals and objectives pertaining to ICT) that describe how the effect will occur by accounting for the relationship between the independent and dependent variables. Mediating variables explain why antecedent variables affect the outcome variables. It also provides an explanation and better understanding of information management behaviour. Lastly, is the outcome variable, which reflects the use of an on-farm computerised information system. Outcome variables depend on antecedent and mediating variables. Current use of IT depends on community culture,

farm and farmers' characteristics, farmers' goals and objectives as well as management style.

Figure 2.7 also indicates that there is direct and indirect relationship between the antecedent and outcome variables (Alvarez & Nuthall, 2006). The authors explain that the reversible arrow on the antecedent variables indicate a one-way relationship between the variables, meaning that one variable can have a positive or negative effect on the other. One-way arrows indicate the link between antecedent and mediating variables and the final outcome variable. Each antecedent variable can, therefore, have either positive or negative effect. All these variables influence the final outcome variable which is the use of information technology represented by the hexagon in Figure 2.7. All these groups of variables are investigated in the study and the data collection instruments have relevant questions that were asked about these variables.

Respondents who were targeted by Alvarez and Nuthall in 2006 were dairy farmers from two communities. In this study on agritourism in Lesotho, it was considered to be important to include farmers, farm employees, tourists and government officials as respondents. Farmers make decisions on which ICT is suitable for use on the farm, while employees execute tasks given by farm owners. Tourists make use of these technologies to search, compare and book agritourism products and services, while government is involved in making rules and regulations when it comes to ICT deployment and use in the country (Tembo, 2008).

The extended model is presented in Figure 2.8 and will subject to modification if necessary, in order to suit the result of the study. The modified model indicating results is presented in Chapter 5.

2.10 The Adapted Information Innovation Adoption Model

The IIAM was adapted in order to give a clear indication of how the factors influencing the adoption of ICT by agritourism farmers in rural communities of Lesotho take place. Figure 2.8 shows the adapted model of the IIAM for the study. Added on the IIAM framework are three important role players namely the farm employees, government and tourist, in the process of adoption. The general community at large were not considered for this research and will be done at a later stage. However, the impact of three role players as well as the farmer on the community and as a result on agritourism is shown by the arrows. Variables shown on the adapted IIAM model were investigated and the results presented in the

findings (Chapter 4), showing how they affect the growth of agritourism in rural communities of Lesotho.

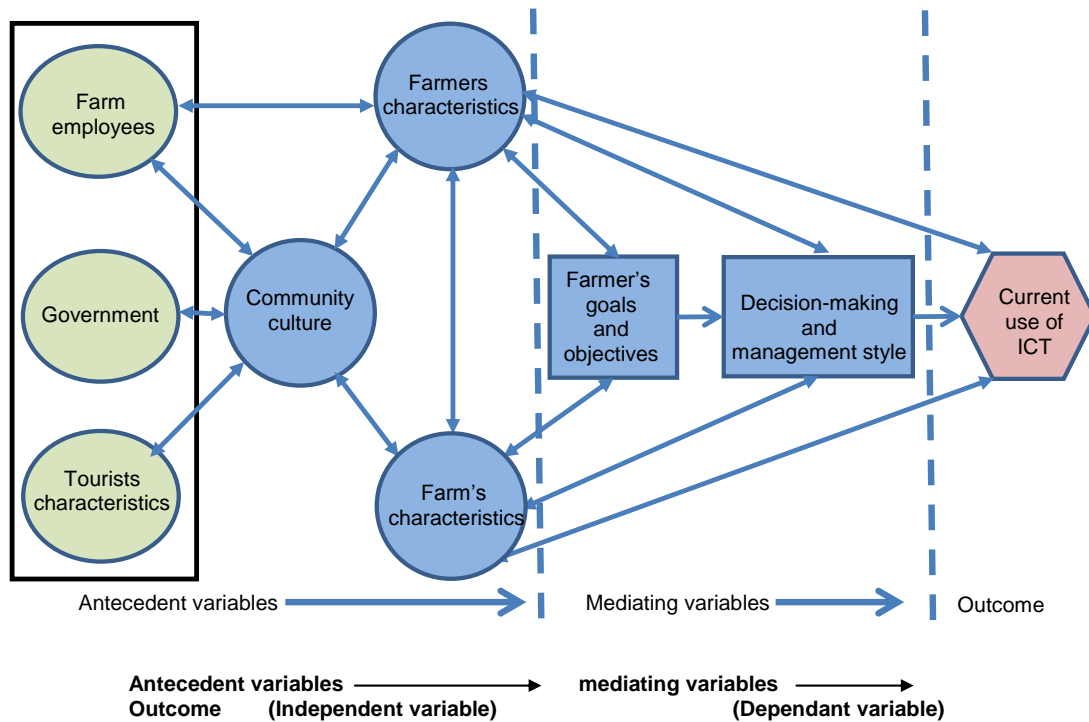


Figure 2.8: Adapted model for ICT use in a developing context

Source: Alvarez and Nuthall (2006:51)

Farm employees are important to the farmers in ways that they have face to face contact with tourists, communication by mobile phone and emails and upkeep of information on websites, social media and more. How employees optimise the ICT infrastructure available to them will affect the growth of the agritourism as farming business. It stands to reason that the relationship between the farmer and the farm employee will also greatly affect the community, the goals and objectives of the farmer and as a result the decision and management style of the farmer and farm operations.

Government holds the key for future growth of agritourism in Lesotho. The cost of the infrastructure is high and individual farmers and community cannot afford building their own ICT infrastructure. The impact of government involvement in agritourism by means of education, infrastructure and economic assistance such as a combined international marketing effort will be great and will largely assist the farmer in setting goals and objectives and increase the quality of decision making. Government do have funding schemes

available for farmers but farmers do not know about these schemes and do not have appropriate channels available to them to access the funds.

Although the agritourism industry is still very small and in fact struggling, tourist albeit in small numbers are discovering Lesotho as an agritourism destination. The more agritourism farmers use ICT, the easier it will get for tourist to visit their establishments. Once again the effect of the tourist flows through the whole model as indicated by the arrows. The tourists recognised that investments in ICT by the farmers to be expensive and without support will find it difficult to adopt ICT.

There are many role players that contribute to the growth of agritourism in any country. Some of the role players are primary and others secondary. They all need to work together to successfully promote the agritourism sector (Mochebelele, 2009). Only the four entities (farm owners, farm employees, tourists and government) directly involved and interrelated to one another as shown in figure 2.8 were used for the research.

From the framework, role players that are significant and have a relationship with ICT use (shown in Table 2.2) in agritourism were evaluated.

Table 2.2: Variable characteristics of the adapted IIMA model

Variable characteristics			
<i>Farms and farm employees</i>	<i>Tourist's</i>	<i>Farm</i>	<i>Government</i>
Age Income Experience Mobility Skills/Education Attitude ICT access Training	Motivation Income Skill/education Location Attitude towards ICT	Farm size Farm activities Location	Legislation Governance Policies Procedures Support

2.11 Summary

This chapter has provided an overview of agritourism internationally, in South Africa as well as in Lesotho. The literature shows that agritourism is the fastest growing sector in eco-tourism and highlights that it has been around since the 1800s. At an international level, European countries such as Italy and France have a well-organised agritourism and the term is clearly understood by communities. These countries have also experienced a growing interest towards agritourism because they receive funding as well as training support from

their governments. Agritourism is a new concept in South Africa and Lesotho compared to European countries. Research done in South Africa and Lesotho on agritourism is limited and not well documented. The most significant agritourism sector in South Africa relates to establishment of the wine industry and wine route in the Western Cape.

The chapter has also outlined the Tourism Area Life Cycle in order to show the stage the agritourism sector falls under. The literature shows it is still in its development stage. The chapter has also discussed the agritourism development and its benefits in rural communities. The chapter further discusses the role of ICT applications in agritourism development. The literature shows that the role of these technologies has been recognised, but because of certain barriers and factors they cannot be used. The chapter adopts a framework of information innovation adoption model by Alvarez and Nuthall (2006) in order to investigate the potential use of ICT to enhance agritourism.

The next chapter discusses the research design and methodology used in this study.

CHAPTER THREE RESEARCH METHODOLOGY

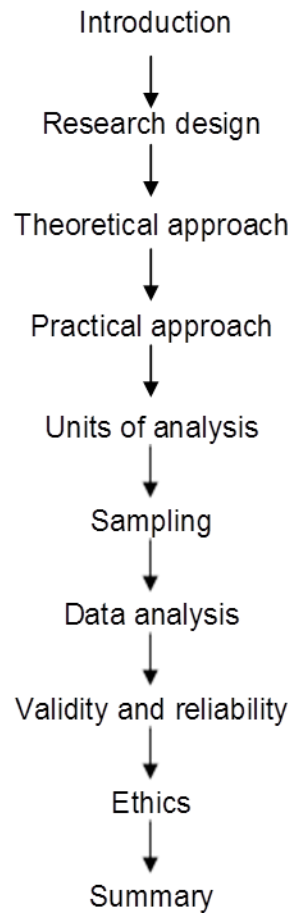


Figure 3.1: Layout of Chapter 3

3.1 Introduction

The purpose of Chapter 3 is to provide an outline of the research approach that was adopted in order to achieve the objectives of the study outlined in Chapter 1. The chapter presents the theoretical approach that has been adopted as well as the practical approach chosen to explore the research question in order to achieve the research objectives. Chapter 3 also describes the researcher's epistemological stance in order to understand the theoretical perspective and an explanation on why a multiple case studies were chosen as a methodology. Further, discusses the methods and procedures carried out for data collection and techniques followed to analyse the data. It concludes by discussing validity, reliability and ethical considerations.

3.2 Research design – qualitative and quantitative

There are different ways in which research methods can be classified. According to Moustafa (2011:67), the most common distinction and popular method is “the differentiation between qualitative and quantitative research methods”. Anderson (2006:3) defines qualitative research as “the gathering, analysing and interpreting data through observation of what people do or say while quantitative refers to counting and measuring of things”. Myers (1997:1) states that “qualitative research was originally developed in the natural sciences to enable researchers study social and cultural phenomena”. Qualitative research methods include action research, case study research and ethnography and their data sources are observation (including participant observation) interviews and questionnaires, documents and texts and the researcher’s impressions and reactions.

Qualitative research is subjective and uses different methods of data collection, mainly individual, in-depth interviews and focus groups. Wyse (2011) states that qualitative research is mainly exploratory and used to gain an understanding of principal reasons, opinions and motivation. It also provides an insight into the phenomena or assists to develop ideas of hypothesis for quantitative research.

A qualitative approach was employed in this research. It was chosen because the nature of the research needed an in-depth understanding of the phenomena under investigation, which could assist to answer questions pertaining to the use of ICT by farmers, farm employees and tourists, and also help identify major barriers that inhibit the use of these technologies to enhance development in rural communities. The nature of this research is interpretive. Fifteen farms were judgmentally selected from rural communities of Lesotho and twenty respondents interviewed. The quality of findings from this type of research depends upon the interviewer’s skills, experience and sensitivity. Qualitative research is less costly and effective in acquiring data about people’s communication needs and their response to views about specific communication.

Myers (1997:1) states that “quantitative research was originally developed in the natural sciences to study natural phenomena”. Data collection methods that are used in the social sciences consist of surveys, laboratory experiments, formal and numeric methods such as mathematical modelling. According to Moustafa (2011:68), quantitative is used “as a synonym for any information collection technique such as questionnaire or analysis procedure such as graphs or statistics that generates numeric data”. Quantitative research is linked with analytical research and its purpose is to reach a universal statement (Brynard & Hanekom,

2005). Johansson (2010) states that when conducting quantitative research, researchers need skills in order to be able to develop theories, test them with proper statistical techniques and interpret statistical information into descriptive information. A large sample is said to be preferable and should be possible to generalise from the findings. Brynard and Hanekom (2005) add that quantitative techniques include observations, pilot studies, quantitative analysis and questionnaires.

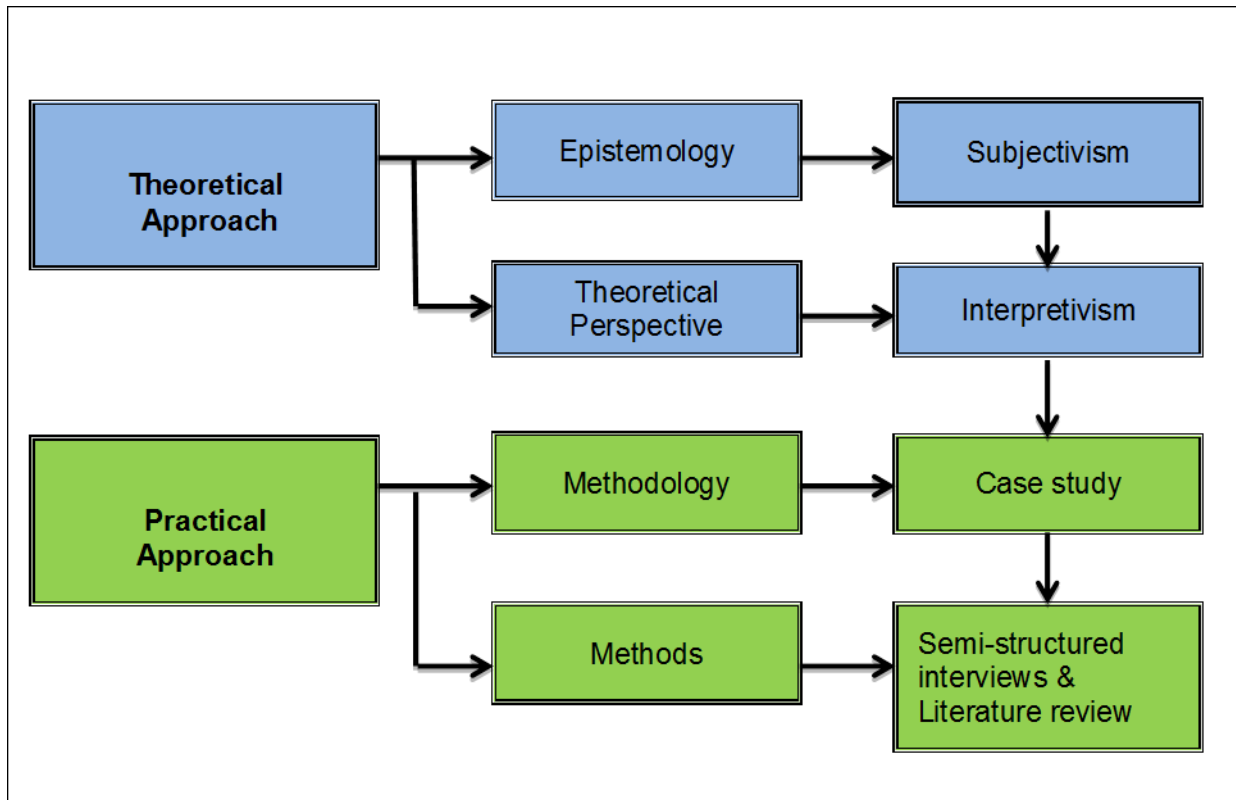


Figure 3.2: Research main approach
Source: Crotty (1998:5)

3.3 Theoretical approach

Research is based on underlying beliefs about what constitutes valid research and which research methods are suitable. Myers (1997) notes that it is important to know the assumptions before conducting or evaluating a research. There are four key elements that are helpful in justifying the researcher's decision making within the research design process. Crotty (1998) states that these elements include: epistemology, theoretical perspective, methodology and methods. The researcher has to adopt a particular stance towards the nature of knowledge. The most relevant philosophical assumptions are those which relate to the underlying epistemology which guides the research.

3.3.1 Epistemology

Figure 3.2 highlights the four primary elements of research design. Epistemology refers to “the assumptions about knowledge and how it can be obtained and these assumptions underpin the research strategy and methods chosen as part of the strategy” (Myers, 1997:3). The term ‘epistemology’ is derived from ‘episteme’, a Greek word that refers to knowledge (Moustafa, 2011). Scotland (2012) states that epistemology is concerned with the nature and form of knowledge and its assumptions are concerned with how this knowledge can be created, acquired and communicated. Healy and Perry (2000:2) refer to ontology as “the reality that the researcher investigates so the relationship between that reality and researcher referred to as epistemology”. Scotland (2012) argues that ontological assumptions are concerns with what constitutes reality and the researcher needs to take position with regard to their perceptions of how things really are or how they work.

Research paradigms are based upon their own epistemology and ontological assumptions and the philosophical underpinning of each paradigm can never be empirically proven or disproven (Scotland, 2012). This research is interpretive in nature and employed an inductive approach to generate knowledge and gain understanding about factors affecting the use of ICT in agritourism and how it can be used to enhance development in rural communities of Lesotho. The research adopts subjectivism as its epistemological perspective.

The three methods contained within epistemology are objectivism, constructivism and subjectivism. It is important and useful to remember that each epistemology represents a range of approaches and identifies the assumptions that underpin it. Feast (2010) claims that objectivism maintains reality exists independently and can be discovered if we go about the right way. Constructivism maintains that meaning is constructed through our minds interacting with the world. Subjectivism holds that meaning is imposed by people’s minds without the contribution of the world and there is no truth or meaning independent of the mind. This research studied the issues pertaining to the use of ICT by farmers, farm employees and tourism with the aim of contributing towards agritourism development in rural communities as well as identifying barriers inhibiting the use of these technologies. As such, a subjectivist approach is appropriate in building data in order to explore the issues relating the study.

3.3.2 Theoretical perspective

Theoretical perspective refers to “a set of assumptions about reality that underpins the questions that researcher asks and the kind of answers they arrive at as a result” (Crossman, 2013:1). Crotty (1998:3) defines theoretical perspective as “a philosophical stance informing the methodology and thus providing a context for the process and grounding its logic and criteria”. Theoretical perspectives that a researcher can use to form their methodology include: interpretivism and positivism. According to Moustafa (2011:71) interpretivism is “an epistemology that supports that it is necessary for the researcher to understand differences between humans in our role as social actors”.

The aim of this research was to explore how ICT can be used by farmers in rural communities with the aim of contributing towards agritourism development and related studies as well as proposing possible guidelines to overcome potential barriers that may inhibit the use of these technologies by farmers in rural communities. Interpretivism was the appropriate approach for this research as it involves elements influenced by humans such as farmers, farm employees and other stakeholders involved in agritourism. It also involves users being the agritourists. An interpretive approach was used to investigate the issues that face the agritourism sector with regard to ICT use in rural communities.

3.4 Practical approach

Practical approach takes account of the methodology and research methods that the researcher has employed in order to address the aim and objectives of the research (Moustafa, 2011). This section illustrates the methodology and methods that were used in order to achieve the objectives of the research. A multiple case study and other methods which include semi-structured interviews and literature review were used in order to investigate the issue of problem of ICT use in agritourism from different perspectives and provided of an in-depth review of the research problem under investigation.

3.4.1 Research methodology

Research methodology refers to “the strategy, plan of action, process or design lying behind the choice and use of particular methods and linking the choice and use of methods to the desired outcomes.” (Crotty,1998:3). Moustafa (2011), states that methodology is concerned with why, what, from where, when and how data is collected and analysed. Methods are

specific techniques and procedures that are used to gather and analyse data related to the research questions or hypothesis.

The main function of research methodology in this research is to provide for the collection of data within minimal expenditure of effort, time and money and all this can be achieved depending on the research purpose. Multiple-case study were used as a research method for this study to answer the research questions pertaining to the use of ICTs by farmers and employees in rural communities and barriers inhibiting the use of available technologies.

Yin (2003:1) defines a case study as “an empirical enquiry that investigates a contemporary phenomenon within its real life context especially when the boundaries between phenomenon and context are not clearly evident”. Yin (2003) indicates that there are two types of case study design, namely: single-case study and multiple-case study. A single-case study is based on a single unit of analysis, while a multiple-case study includes multiple units of analysis. Baxter and Jack (2008) state that a single case study is used to decide if a theory’s propositions are correct or represent a unique case.

Multiple-case study is employed when the researcher is interested in using more than one case in order to collect information from different sources and draw conclusions from the facts. Moustafa (2011), states that the main advantage of using the multiple-case study approach is to enable replication of findings of one case across the others to provide more detailed insight into the phenomena under investigation. The disadvantage of using multiple-case study is that it can be expensive and time consuming.

Multiple-case study was used in this research to investigate the potential use of ICT in agritourism in order to explore the views and understandings of agritourism farmers, employees, agritourists and individuals from the Ministry of Tourism, Environment and Culture with regard to ICT use. Data collection methods employed included semi-structured interviews. See (Figure 3.3).

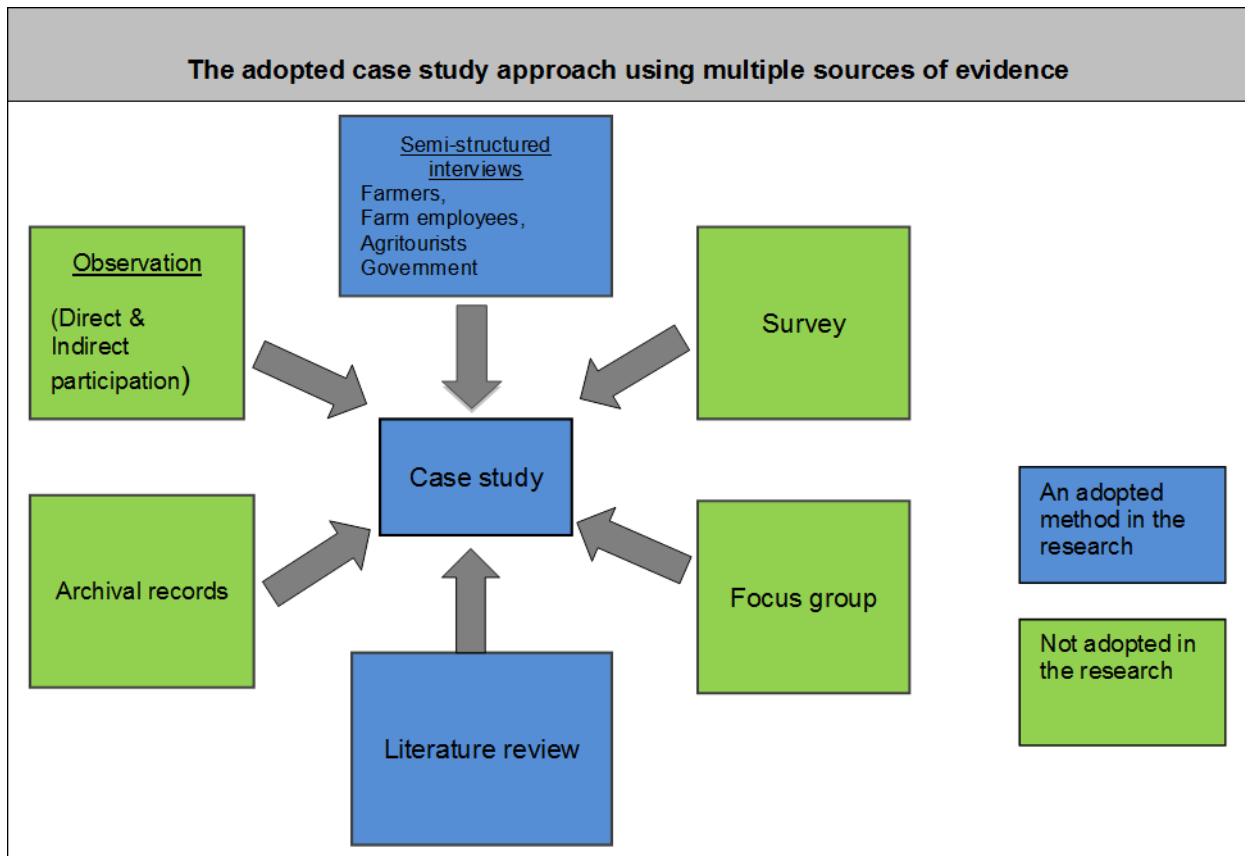


Figure 3.3: Case study approach

Source: Yin (2003:102)

3.4.2 Research methods and techniques

After deciding on using a multiple-case study strategy as the main method for this research, two methods of data collection, which included semi-structured interviews and literature review, were used to collect data related to the phenomena under investigation. These methods are described in the following section.

3.4.2.1 Semi-structured interviews

An interview is a verbal or oral communication between two or more individuals in which the researcher (or the interviewer) asks questions to a participant or the interviewee (Yin, 2003). The author notes that interviews are important techniques for data collection. Moustafa (2011), states that interviews are a widely used research method, which provides a way of generating data through asking participants about their experience of a particular situation. There are two forms of interviews: closed (or structured interviews) and open-ended interviews. Open-ended interviews allow respondents to express themselves more freely. In

this research, interviews conducted were based on open-ended or semi-structured questionnaires.

The method of data collection used for collecting data is face-to-face interviews with semi-structured questions. The face-to-face interviews provide a way of generating data by asking in-depth questions regarding their experience with the problem under investigation. Levy (2006) mentions that face-to-face interviews provide an effective tool and create a setting where interviewees would speak openly. The researcher made sure that the research did not involve participants who are unable to give informed consent. No participants took part in the interviews without their knowledge. The interviews did not involve discussion of sensitive topics and the researcher commenced the interview after the participants agreed to take part.

Due to the busy schedule of the farmers and employees some interviews were interrupted during the session. The interview questions were designed in such a way that most of the important and essential information was placed at the beginning. The interviews were recorded with a digital voice recorder and a smartphone. Before the interviews commenced, the researcher introduced herself and the purpose of the interview. Once everything was clear and the interviewees agreed to be recorded, the interviews proceeded. Most of the interviewees had difficulty in expressing themselves in English so the researcher decided to use Sesotho as a medium, as it was their first language. The interviews were later transcribed to facilitate analysis. Refer to 3.7.

3.4.2.2 Literature analysis

According to Moustafa (2011:79), literature analysis is “a form of data collection methods that is used to analyse and study existing material in order to form an in-depth understanding of the phenomena under investigation”. Successful research depends on a well-planned and thorough review of relevant literature (Brynard & Hanekom, 2005). In this research, a number of documents, including books, journal articles, published thesis/dissertations, government reports and the Internet were used as sources of secondary data. Information collected from these sources was put together in order to compile a literature review. The reviewed documents were helpful in identifying the importance of ICT use in agritourism and the different types of ICT that can be used by agritourism farmers to enhance development in rural communities.

3.5 Units of analysis

Crossman (2013:1) defines units of analysis as “the major entity that the research wants to analyse in a study”. In this research, the units of analysis were the users, which included agritourism farms, government officials and agritourists as a group in rural communities of Maseru. The units of observation were the agritourism farmers, farm employees, individuals from the Ministry of Tourism, Agriculture and Culture.

3.6 Sampling

Saunders et al. (2009) states that there are two types of sampling techniques in social research: probability and non-probability sampling. In order for the researcher to gather information about the cases, all sampling techniques were checked and the most appropriate technique was chosen. The different sampling techniques are shown in Figure 3.1 below.

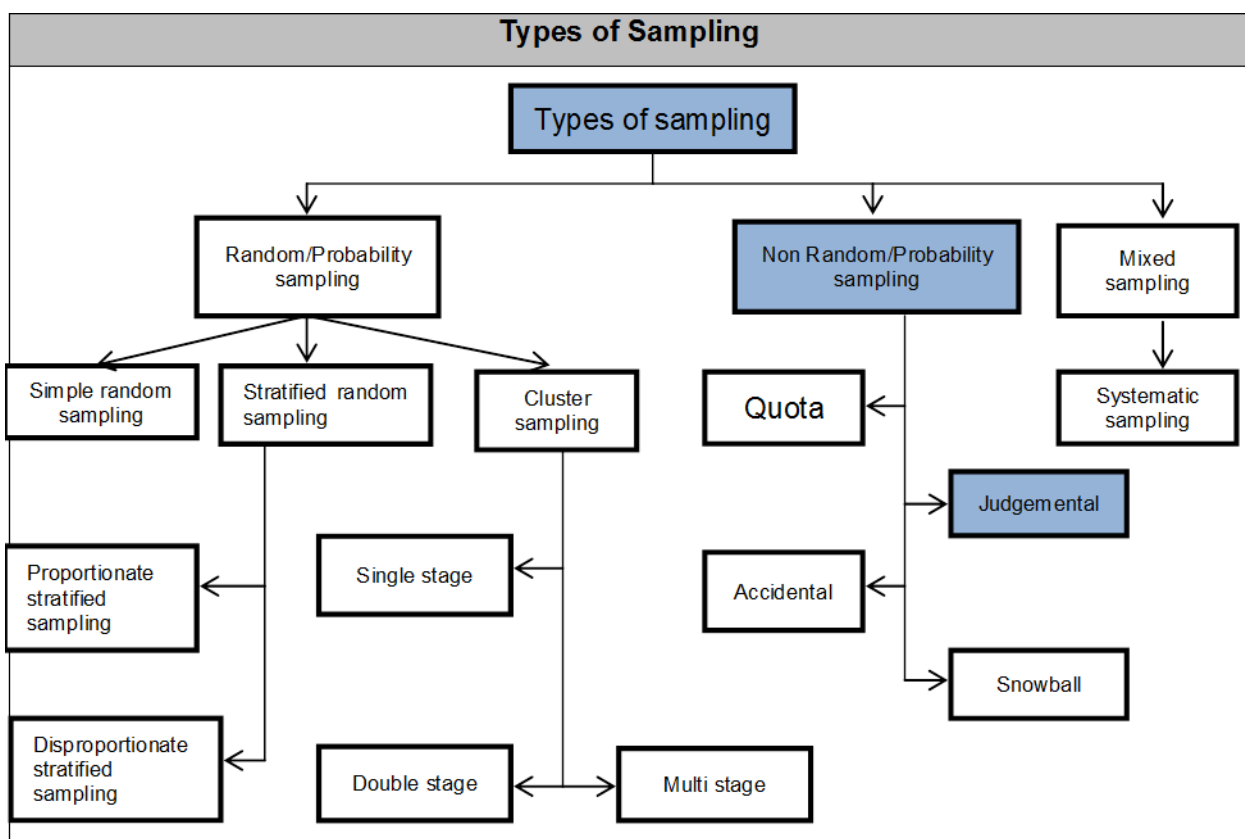


Figure 3.4: Types of sampling

Source: Kumar (1999:198)

According to Nonyane (2009:39), probability sampling refers to “the selection of participants from a research population whose number and identities are known and researchable while non-probability sampling relies on personal judgement in the element selection process and it prohibits an estimation of the probability that any given population element is included in the sample”. If the objective of the study is to generalise the findings to the population, probability sampling is used. However, if the study is exploratory in nature, which is less concerned about the sample’s size in relation to the population, the non-probability sampling is appropriate.

Given the nature of the research problem, non-probability with judgementally sampling technique was used to select farmers from the agritourism farms that are involved in commercial farming in rural communities of Maseru. Subsistence farmers were excluded as they only focus on growing food and raising livestock to feed them. The sample also included the agritourists who visited the farms.

3.7 Data Analysis

According to Moustafa (2011), in order to make data useful and meaningful, it has to be processed. Data that is collected needs to be grouped into categories before the process of analysis begin in order to make it understandable. Gray (2004) mentions that there are two main approaches for analysing qualitative data: content analysis and grounded theory. When analysing qualitative data, the researcher has to choose an appropriate technique of analysis.

In this research, content analysis was employed to analyse data. Myers (1997:10) states that “content analysis is used for making replicable and valid reference from data to their context”. An appropriate technique used to obtain data was in-depth interviews that were conducted face-to-face with the respondents. Data collected from face-to-face interviews with the participants were recorded and transcribed so that detailed analysis could be carried out. Data were then coded by looking for specific words and meanings that were relevant to the topic for which themes could be identified in the text provided for analysis. The main reason for using content analysis was to explore the data collected and get a valid picture of different case studies which will strengthen interpretation and enhance the outcomes of the research. Moustafa (2011) observes that the researcher has to look for appropriate data analysis techniques in order to gain useful information. Manual qualitative data analysis was used to transcribe the interviews.

3.8 Validity and reliability

In qualitative research, validity and reliability refer to research credibility and trustworthiness. The information the researcher collects has to truly reflect the research problem and whether it is real or not. The study employed the strategies proposed by Creswell (2003) in order to achieve research validity. These strategies include: triangulation, peer review or debriefing, rich and thick description, external audit and participants' views. Table 3.1 illustrates how they were adopted.

Table 3.1: Research validation strategies
Source: Creswell (2003:207)

Validation Strategies	Adoption in the research
Triangulation	Different methods were adopted in this research for data triangulation. In each phase more than one method was used.
Peer review or debriefing	This research was supervised by PhD supervisor. He was always keen to check it and discuss its results with the researcher.
Rich and thick description	Qualitative data (e.g. Interviews) were collected. A detailed description was used in the analysis of the results to give as much information about the results to the readers to allow them evaluate its credibility.
External audit	This research was published and discussed in internal conference ENTER 2014 to obtain more feedback from the auditors to judge its accuracy and increase its credibility.
The researcher solicits participants' view	The results of this research were tested

To ensure reliability for this research, a number of measures to ensure reliability of the collected data and minimise subjectivity were adopted. First, all interviews were recorded for sufficient evidence. Secondly, the interviews were designed to support the objectives of the research and each question was explained to participants. Thirdly, all participants were asked the same question in order to ensure that all the issues were covered. Fourthly, appointments with the participants were arranged four weeks before the interview to make sure that they would be available for the interviews. Further, the interviews were transcribed in full (Appendix D, E, F and G). As the interviews took place in Sesotho (the official language of Lesotho), the researcher acknowledges that some information may have got lost

in translation. The correctness of the transcription is under security as the interviewees can neither read nor understand English and could, therefore, not verify the transcriptions.

3.9 Ethical considerations

It is important for the researcher to adhere to ethical considerations when conducting research. According to Creswell (2014), research cannot simply be conducted by anyone and anywhere. The research undertaken was done in a manner that ensures participants were confident their privacy and confidentiality would be protected. The research did not involve unethical behaviour and did not involve participants who were unable to give informed consent. Participants did not take part in this research without their knowledge and written consent. Permission was also sought to record the interviews. It did not involve discussion of sensitive topics or environmental studies, which could be contentious or use materials or processes that, could damage the environment. Additionally, the research method used did not have any negative impact on the participants and all participants were given a brief summary of the research data collection methods for better understanding.

3.10 Summary

In this chapter, the researcher adopted qualitative research and explains how qualitative research approach was used to explore and a deep understanding on the issues pertaining to the problem under investigation. The chapter also illustrates the two main research approaches which include the theoretical and practical approach. Under the theoretical approach the researcher discusses the four elements of research used for this study which include: epistemology, theoretical perspective, research methodology and methods. The researcher adopted constructivism as its epistemological stands which seemed to be reliable with the nature of research and its main objectives. Interpretivism was also adopted for this research as it involves the elements influenced by human. In terms of practical approach, the researcher took multiple case-studies approach as a research method and used semi-structured interviews as well as literature review as data collection methods. This chapter explained how reliability and validity were ensured and concluded by discussing how the ethical considerations to adhere to when conducting a research.

The next chapter presents the findings and themes that emerged from the data that was collected from the interviews.

CHAPTER FOUR
RESEARCH FINDINGS, THEMES AND DATA ANALYSIS

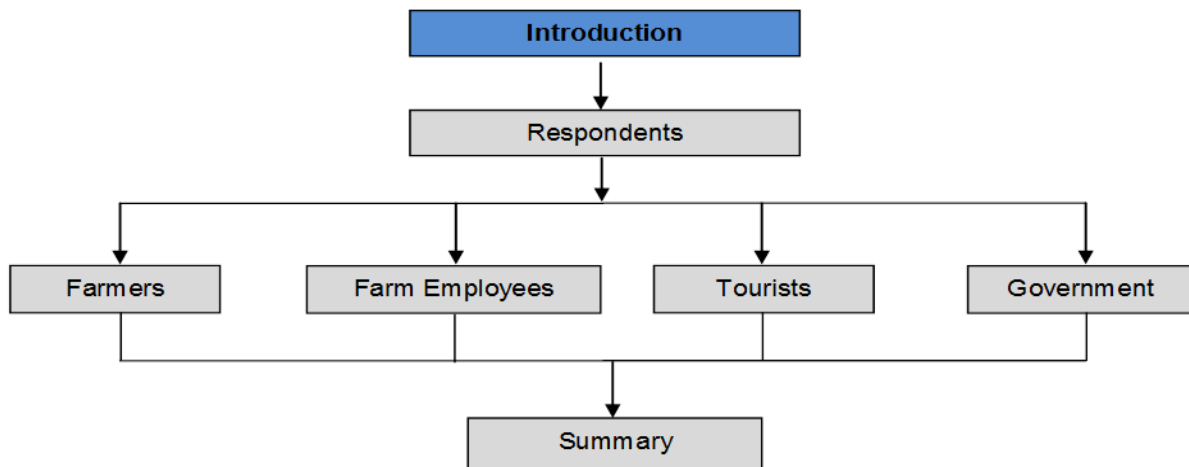


Figure 4.1: Layout of Chapter 4

4.1 Introduction

The purpose of Chapter 4 (Figure 4.1) is to present the findings that emerged from the data collected from interviews in the rural communities of Maseru, Lesotho (Figure 4.2). Content analysis was used to analyse the data as indicated Chapter in 3, section 3.7 (page 37). Chapter 4 is constructed in such a way that the introduction is followed by a description of the respondents, followed by the results obtained from the agritourism farmers, farm employees, agritourists and individuals from the Ministry of Tourism, Environment and Culture. For ease of use Figure 4.1 will be used throughout Chapter 4.

Lesotho is divided into 10 administrative districts with a total area of 30.355 sq. km. The country has four ecological zones: Lowlands, Foothills, Mountains and Senqu river valley. The main factors that differentiate these zones from one another are altitude above sea level, impact of temperature and soil depth. Figure 4.2 shows the ecological zone where the study was conducted in the southern lowlands. The lowlands of Lesotho have good soil better suited for agriculture due to run-off of topsoil from the highlands into the lowlands, resulting in fertile agricultural environment (Abdulla & Josserand, 2007).

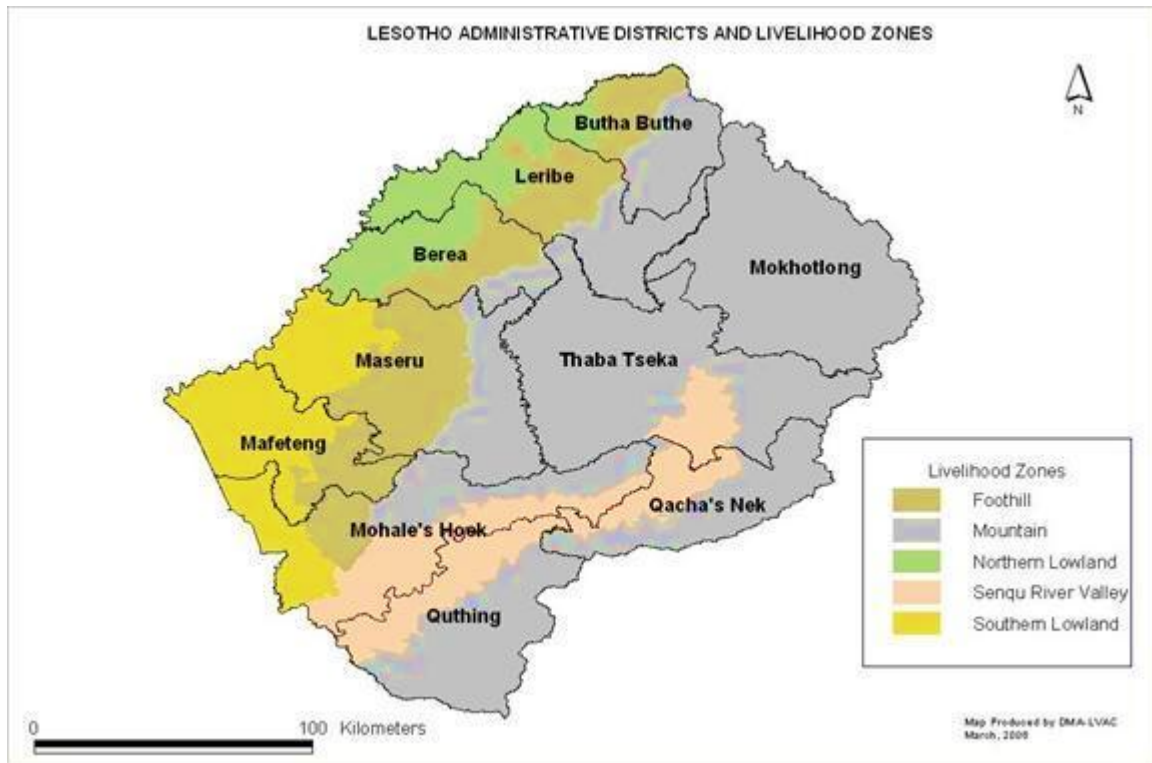


Figure 4.7: Lesotho map-districts and agro-ecological zones

Source: Abdulla and Josserand (2007:26)

Fifty percent of the rural population in Lesotho relies on farming as the main source of income and up to 80% of the population still engages in some form of agriculture-related activities, which include on-farm casual work (Anon, 2012).

ICT can play a significant role in promotion of sustainable development and enhancement of the livelihoods of farmers in rural communities. Although farmers can access some agritourism information, certain barriers constrain the use of ICT in rural communities. The study aims to explore how ICT can be used by farmers in rural communities to contribute towards agritourism development and related studies as well as propose possible guidelines to overcome potential barriers that may inhibit the use of these technologies by farmers in rural communities.

Interviews were conducted in order to obtain information regarding the participants' experiences in terms of the use of ICT as a tool to enhance agritourism in Lesotho. Of the 23 respondents interviewed, six were agritourism farmers, eight farm employees, six tourists who were present on the farms on the day the interviews were conducted and three officials from the Ministry of Tourism, Environment and Culture. The themes that emerged from the interviews are presented collectively and include a summary defining each theme in Table 4.5, section 4.7.

For the benefit of the reader, the problem statement, main research question and the aim are provided here.

4.1.1 Problem Statement

Many farmers do not have access to ICT, resulting in the ICT offerings to be difficult to use and thereby creating a challenging environment to develop agritourism as an industry.

4.1.2 The main research question

How can ICT be used to assist farmers with agritourism development?

4.1.3 The research sub-questions

Sub-question 1.1: What technologies do agritourism farmers use in rural communities?

Sub-question 1.2: What information do agritourism farmers need to successfully run their farms?

Sub-question 1.3: What are the factors that influence the use of ICT in agritourism?

Sub-question 1.4: How can ICT be used to enhance agritourism development?

4.1.4 Aim

The aim of this research was to explore how ICT can be used by farmers in rural communities to contribute towards agritourism development and related studies as well as propose possible guidelines to overcome potential barriers that may inhibit the use of these technologies by farmers in rural communities.

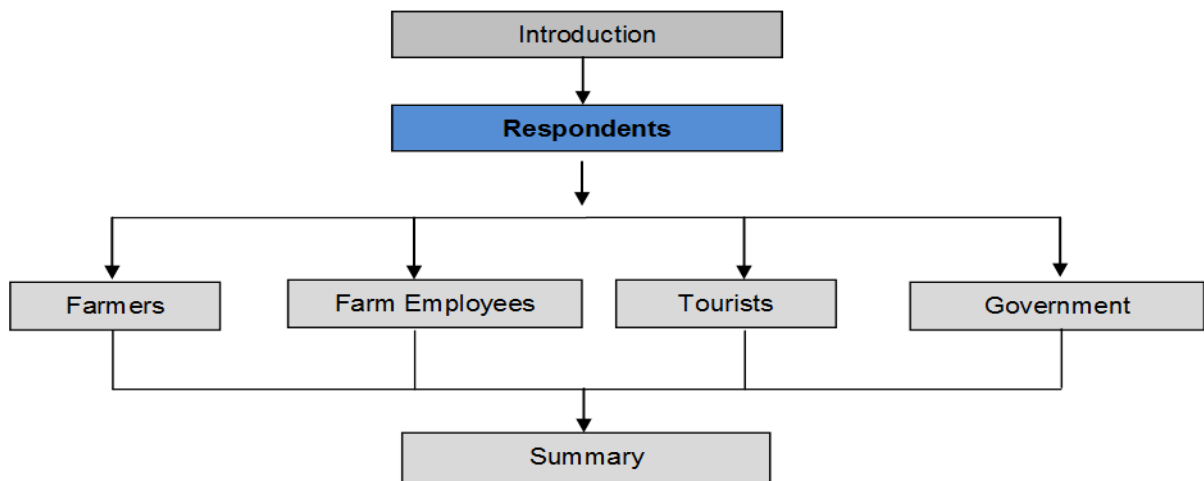


Figure 4.8: Respondents

Figure 4.3 shows the topics and flow of the chapter. Under the heading ‘The potential use of ICT to enhance agritourism in Lesotho’, the results of the data collected from the respondents namely: farmers, farm employees, tourists and government officials are discussed. The respondents per section are placed in context.

4.2 Respondents

As indicated in Chapter 3 section 3.5, the units of analysis were farms (farmers and farm employees), the collective group of tourists and government officials while the units of observation were agritourism farmers, farm employees, individual tourists and government officials.

4.2.1 Farmers

The farmers interviewed were individual farmers involved in commercial farming. The size of the farms ranged from 11 to 19 hectares. Agritourism is one of the revenue streams farmers have developed to supplement income from their farming operations. Agritourism products include overnight stays in bed and breakfast establishments in the rural areas, lodging and camping, horseback riding, commercial farm tours, agritourism exhibits, exotic farm animals, farmers’ markets, school tours, livestock feeding, cooking classes, harvesting festivals, tree planting, traditional entertainment events, u-pick operation, on-farm sales and crop viewing.

Since the farms are relatively small and income more of a subsistence economy, farm owners are actively involved in managing of the farms and developing agritourism products.

With the high level of involvement of farm owners in the new industry of agritourism; it is important to determine what experience the farmers have in terms of farming and agritourism. Figure 4.4 illustrates the results obtained from the farmers interviewed with regard to the number of years they have owned and been working on the farms. The farmers interviewed, with the exception of one farmer, have on average eight years of experience.

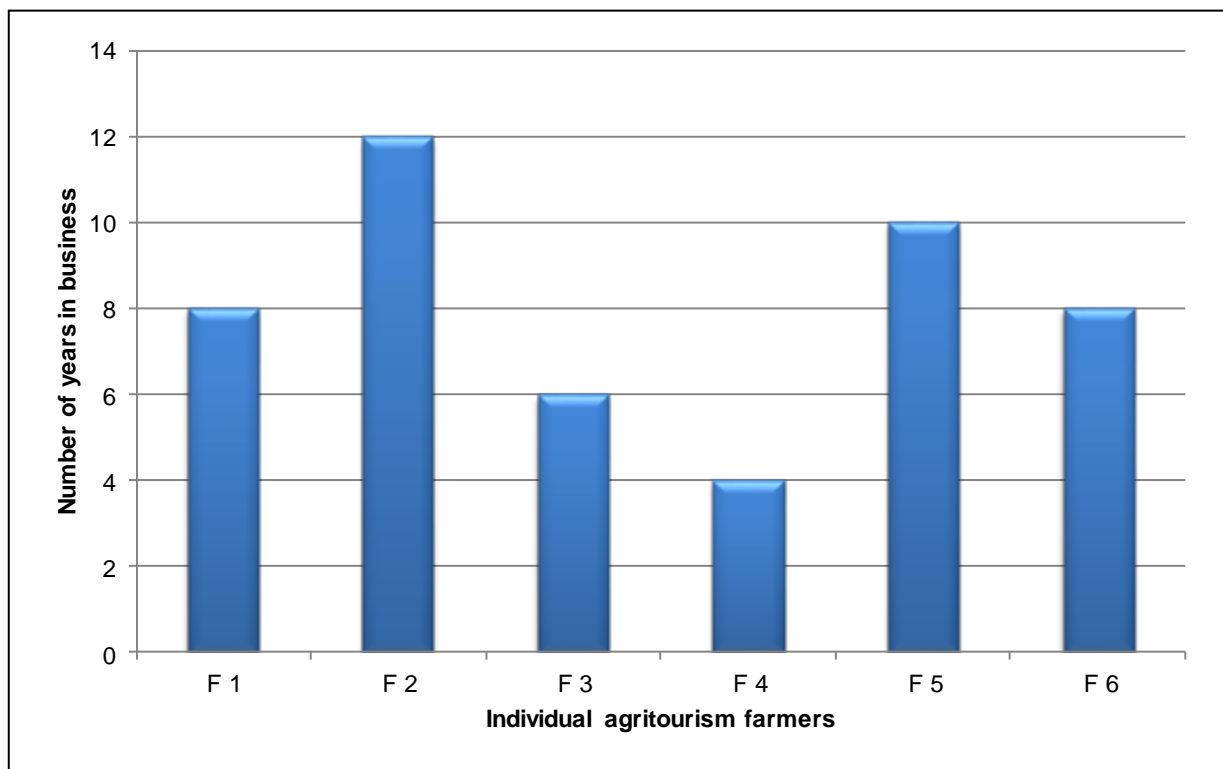


Figure 4.4: Graphical representation of the individual agritourism farmers' years in farming business

4.2.2 Farm employees

Farm employees are people working for farm owners. The majority of the farm employees interviewed had been working at the farms for more than eight years. Some of them work either in the fields while others do administrative work. Farm employees play a significant role in agritourism as they are involved in sharing, exchanging and disseminating knowledge through face-to-face contact with tourists and, where possible, the use of ICT in agritourism. Farm employees perform the day-to-day routine work, execute and perform, from time to time, other agritourism functions as requested by their employers.

4.2.3 Tourists

Tourists include people who travel to, visit and stay in places outside their usual environment for not more than one consecutive year, either for leisure, business and other purposes. Tourists were interviewed in order to assess whether they make use of ICT to buy agritourism products and services. Six tourists interviewed during the data collection process consisted of domestic (locals) and international tourists visiting Lesotho. It was important to interview both groups in order to ascertain whether they use ICT and, if so, how compared to farmers and farm employees.

4.2.4 Government

Government departments across the world use ICT in order to meet the challenges of modernisation and globalisation. As such it was essential to the Lesotho MTEC officials to be interviewed. Thus the views of these participants were critical as they have been contributing towards resolving the problem that was being investigated.

The MTEC in Lesotho is responsible for managing the environment and cultural heritage as well as making the country a quality eco-tourism destination for the betterment of the livelihoods of citizens of Lesotho. The MTEC is also responsible for promoting environmentally culturally sustainable development, making the country the number one tourism destination in the region through provision of high quality service and recreation. Its role is to regulate and monitor tourism establishments by establishing and maintaining standards through licencing and grading.

4.3 Analysis of data on potential use of ICT to enhance agritourism: farmers

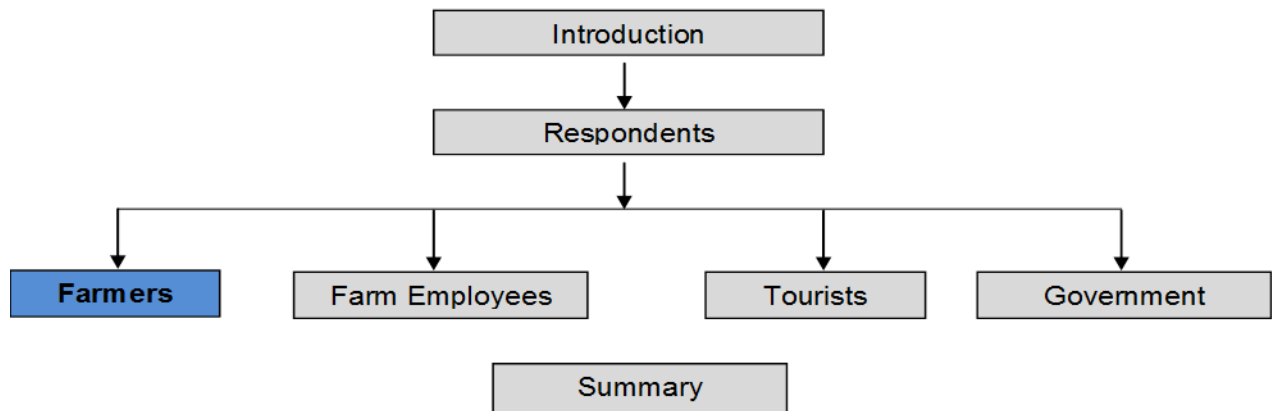


Figure 4.5: Farmers

The responses of farmers to questions asked during the interviews are shown in Appendices D, E, F and G. Four categories and nine themes were identified. The first category explores technologies agritourism farmers use in rural communities. The second category relates to information agritourism farmers need to successfully run their businesses. The third category highlights factors that influence ICT use in agritourism, while the fourth is use of ICT to enhance agritourism development. The significant themes are presented in Table 4.6.

4.3.1 Category 1: Technologies agritourism farmers use in rural communities

Sub-question 1.1: What technologies do agritourism farmers use in rural communities?

Responses from the interviewees indicate that agritourism farmers use several technologies for agritourism purposes. These technologies include: cellphones, radio, television, landline phones, computers, the internet, digital cameras, fax and voice recorders as shown in Table 4.1 and Figure 4.6. Table 4.1 shows the technologies being used such as cellphones, television, radio, landline phones and computers. Two of the agritourism farmers interviewed regarded the internet and fax as important technologies that farmers can use in order to gain access to information. Digital cameras and voice recorders are mostly unused technologies. The farmers indicated that they use technologies such as cellphones, television, radio and landline phones to gain access to information on agritourism.

Interviewee 2 had this to say: “...we rely on technologies such as cellphones, television, radio landline phone and computers to get access to information relevant to agritourism; this is because these technologies are cheaper and easily accessible than modern technologies” (Appendix D: page 128).

Table 4.1: Technologies agritourism farmers use in rural communities

What technologies do farmers use in agritourism?	No. of responses
1.Cellphones	6
2.Television	6
3.Radio	6
4.Landline phone	6
5.Computer	3
6. Internet	2
7. Digital cameras	2
8. Fax	1
9. Voice recorders	1

Interviewee 1 stated,

“...we use several technologies such as cellphones, television, radio, and landline phone, computers to get access to information relevant to agritourism as well as for private purposes such as communication with family and friends as well as for entertainment purposes...” (Appendix D). Interviewee 3 stated that *“...we use technologies such as cellphones and internet to get in touch with suppliers, customers and other stakeholders involved in agritourism through the use of emails. The use of these technologies also helps us get information quickly without wasting travelling costs...”* (Appendix D).

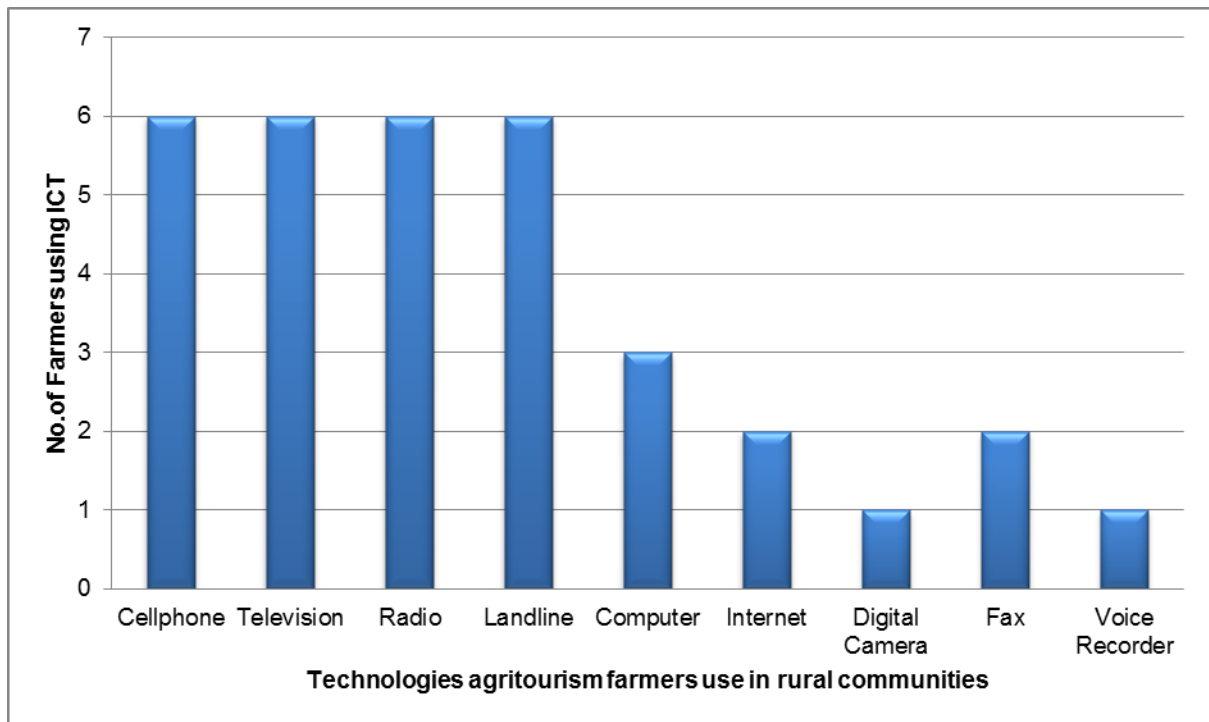


Figure 4.6: Graphical representation of technologies agritourism farmers use in rural communities

Finding 1: Farmers are aware of ICT tools and use some on their farms.

Farmers use technology in their operations, but find it difficult to gain access to the ICT infrastructure hindering them to gain the benefits and opportunities that ICT can offer them. Interviewee 6 argued that: *“...although we have technologies such as computers and smart phones in our business it is still difficult for us to get access to cellphone coverage and internet connection is slow and expensive therefore we are struggling to make use of other technologies...”* (Appendix D). This was reiterated by interviewee 4, who indicated that: *“...we still make use of sign boards and pamphlets to get access to information as well as disseminate knowledge to my customers and stakeholders involved in agritourism...”* (Appendix D).

Finding 2: ICT access challenges faced by farmers make it difficult to gain the benefits and explore the opportunities that ICT offers them.

Although some farmers use computers, the internet and faxes on their agritourism farms, slow and poor internet infrastructure and mobile access hinders the farmers from exploiting agritourism to its fullest. The response of one of the interviewees included the following: *“...there is poor internet connection in some areas therefore; we are having difficulties in accessing information on the internet...”* Interviewee 3 (Appendix D).

Finding 3: Poor internet connections and access are important constraints for agritourism development.

4.3.1.1 Cellphones

Cellphones play a major role in agritourism and farmers interviewed regard cellphones as more suitable technology in saving them time, money and labour. Farmers in agritourism are using cellphones for private and business purposes. Interviewee 5 explained that:

“...I prefer to use cellphone for business and private purposes due to its reliability and affordability. It gives me ability to ask question and get response quickly unlike other means of communication such as emails where one has to wait for the response when the person has read the email” (Appendix D).

Farmers also mentioned that the use of cellphones assists them to communicate with a wide range of markets, which include suppliers, customers and the government. Interviewee 1 stated that: *“...I am able to negotiate agritourism product prices with suppliers and customers and manage to make decision at the same time through the use of cellphone; it helps in saving travelling and communication costs...” (Appendix D).*

Although the use of cellphones is regarded as significant in agritourism industry, respondents interviewed indicated that they find it difficult to connect to cellular networks because of poor telecommunication infrastructure in rural communities of Lesotho. According to interviewee 5,

“...network coverage is so bad here, we are forced to stand on top of the hills in seek of cellphone signals. The farms are located in areas where telecommunication infrastructures that are needed to solve the problem are not easily accessible and therefore become a major obstacle to network connections and signal” (Appendix D).

Finding 4: Connectivity via mobile devices to the mobile networks is a stumbling block in the development of agritourism.

4.3.1.2 Television

Television is regarded as one of the most important technologies used by agritourism farmers in sharing and exchanging information to broader markets and to increase sales and profitability. All respondents interviewed own a television set and said that they access

information through scheduled television programmes such as “Re bitsa Lihoai” broadcast by the Lesotho Television Station. There are two television stations in Lesotho, namely: the Lesotho Television Station and Trinity Broadcasting Network (TBN). However, people with digital satellite television (DSTV) in other parts of the country have access to a number of other channels. Interviewee 5 argued that: “...television provides us with information through programmes scheduled for agritourism farmers. Majority of us rely on this type of technology to get access to information because there are a limited number of technologies available to us in rural communities...” (Appendix D).

Television also provides agritourism farmers with information on tourism establishments, attractions and events. Farmers access information about tourism seasons, weather forecasts and environmental changes through television. Farmers and agritourism experts are occasionally invited to television programs in order to present, discuss and suggest new ways of improving their agritourism offerings. This is supported by interviewee 1 who said that:

“...television helps us a lot because we are able to get access to information on weather through scheduled weather focused programs, this is a cheaper means of getting access to information relevant to our offerings...” (Appendix D). Interviewee 3 disagreed with the statement of interviewee 1 that “television helps a lot” by indicating that: “...television provides limited information on agritourism. Lesotho television operates for three hours and agritourism programs that are regarded as important by farmers covers certain areas and scheduled for a short time” (Appendix D), resulting in a need for farmers to have alternative means to get more relevant information.

Finding 5: Agritourism does not get enough exposure on television in order to promote the agritourism products to a wider audience.

4.3.1.3 Radio

Despite the revolution in mobile cellphones and television, farmers in rural communities still prefer listening to the radio in order obtain information on agritourism offerings. “...radio is a highly effective method of information sharing and dissemination. We use it mostly to access information relevant to agritourism through programs scheduled for agritourism farmers. Programme organisers also allow listeners to make calls and participate by engaging them in conversations during the scheduled programs” (Interviewee 6; Appendix D).

Lesotho has a number of radio stations, which include: Radio Lesotho, MoAfrika FM, Ultimate, Harvest, Catholic, Joy and Thakhube FM. Most of these radio stations offer programs on agritourism at different times of the day and reach a wide variety of agritourism markets. Interviewee 3 mentioned that: *"...the use of radio helps us get access to information related to agritourism."* Interviewee 1 also stated that: *"...sometimes radio stations allow us to participate by engaging us in conversations during the scheduled agritourism programs, they give us an opportunity to make calls and ask questions related to agritourism and get feedback at the same time..."* (Appendix D).

Finding 6: Farmers regard radio as an effective method of information sharing.

4.3.1.4 Landline phones

Although it is regarded as old technology, farmers still prefer to use landline telephony in their daily communication activities. Respondents agreed that farmers in rural communities still rely on this type of technology to communicate with their suppliers and other stakeholders. Interviewee 4 stated: *"...we rely on landline phones to communicate with families, suppliers and customers because it is easy to use and saves us travelling costs at the same time. The use of other technologies such as cellphones sometimes gives us problems when it comes to network coverage..."* (Appendix D).

Some farmers are of the opinion that new and sophisticated technologies are expensive and also promote theft. According to interviewee 5 (Appendix D), *"...I do not use the latest technologies such as the internet because it exposes our children to immoral stuff and promotes theft in our communities. Thieves use these technologies to commit crime related activities and assume that we have money when they see these technologies in our farms..."*

Finding 7: Landline telecommunication is still seen as the most reliable way of communication for farmers.

Finding 8: Some farmers are skeptical about the value that technology offers and view it as a possible fraud tool.

4.3.1.5 Computers

Computers play an important role in assisting farmers gain access to agritourism information. Out of six farmers interviewed, three own computers and are using them to store and retrieve information. Only two farmers among the respondents interviewed have

access to the internet and use computers to do online transactions, stock taking and surf the internet. In this regard, interviewee 2 said: “...*the use of computers and internet help us save important information and allows us to do online transactions and banking through the use of electronic media*” (Appendix D).

Farmers see the importance of computers when it comes to decision making. Interviewee 2 said the following: “...*computers are useful when connected to the internet because it helps us search, compare and make decisions whether we want to purchase agritourism offerings through electronic media with the aid of computers*” (Appendix D).

Finding 9: Many farmers do not have internet access and do not use computers to gather information or promote their agritourism enterprises.

In sections that follow some of the technologies are discussed. These include the internet, digital cameras, faxes and voice recorders.

4.3.1.6 Internet

The internet plays a critical role in the production and competitive advantage of any business. From the respondents interviewed, two have access to the internet and view it as the most suitable technology for farmers to access information relevant to agritourism offerings. They stated that the internet is reliable and provides accurate information on agritourism. Interviewee 3 said that: “...*internet gives us a clear and accurate picture of the products we are looking for, it also allows us to search and compare offerings and prices before making decision. Agritourism businesses that use internet are able to compete at an international level at a reduced price and also gain access to online markets...*” (Appendix D).

Although the internet is seen as important to agritourism, other farmers indicated that the late introduction of internet infrastructure in Lesotho and high connectivity costs result in limited uptake. Respondents were of the views that the internet is slow and least preferred. Dial-up connectivity remains widely used in Lesotho. “...*high cost of dial up connection is the main problem that prohibits us from using internet*”. (Interviewee 6; Appendix D).

Finding 10: Although farmers view the internet as important for agritourism, a lack of internet access due to ICT infrastructure hinders growth of the industry.

4.3.1.7 Digital cameras

Digital cameras are in general seen as an important technology that farmers use for business and private purposes. Although this type of technology is important, only one respondent uses a video camera. Respondent said that digital cameras could help to improve the quality of information by allowing farmers to present information in the form of videos and pictures. In this way, customers make decisions based on what they see, instead of being told. Interviewee 4 stated that: *"...the use of digital camera helps us present our offerings to customers in an organised and understandable manner"*. In support of interviewee 4, interviewee 5 said: *"...our customers are able to compare and make decisions based on the video and pictures presented to them"* (Appendix D).

With regard to its availability and usability, the majority of farmers in agritourism are not using digital cameras because of high costs involved. Interviewee 6 stated that: *"...We do not have access to electricity and majority of us depend on generators and car batteries. These tools can only be affordable to a certain number of farmers"* (Appendix D).

Finding 11: The high cost of digital technology is a main factor constraining the use of ICT by farmers.

4.3.1.8 Facsimile (fax) technology

Faxes are considered an old method of gathering, exchanging and disseminating knowledge and information. However, two of the respondents stated that they use fax for quick messages and assessment of the latest discoveries in the agritourism industry. *"...I use fax most of the time in my farm, it is still a fast and cheaper method of sharing information which helps me send and receive different orders to suppliers, customers and other stakeholders involved in agritourism"* (Interviewee 2; Appendix D).

Finding 12: Fax technology is used by some farmers and seen as a supporting tool for information sharing.

4.3.1.9 Voice recorders

One of the respondents interviewed uses a voice recorder for business purposes, because it is a useful technology. Interviewee 4 stated: *"...Voice recorder is one of the most important technologies that can help farmers improve the quality of agritourism information; we use it"*

to record conversations and information such as details of sales that we cannot write down..." (Appendix D).

Respondents mentioned that voice recorders are useful to farmers because they can help them select information they need from the recorded interviews. The majority of farmers in rural communities are not using this type of ICT because of its high cost and maintenance. Interviewee 6 stated: *"...voice recorder is helpful especially in interviews where we have to concentrate on listening and asking questions at the same time; however most of us are unable to use this technology because it is expensive and we cannot afford to buy it"* (Appendix D).

Finding 13: Voice recorders are seen as useful tools by farmers and can improve quality of information.

Finding 14: Lack of financial resources hinders the use of some potentially useful technologies in agritourism.

4.3.2 Category 2: Information agritourism farmers need to successfully run their farms

Sub-question 1.2: What information do agritourism farmers need to successfully run their farms?

Information is the most valuable asset for the agritourism industry and has to be timely and accurate. Farmers need information relevant to agritourism in order to improve their livelihoods and create sustainable development in rural communities. Respondents interviewed mentioned that limited access to and availability of agritourism information is a major challenge, especially in rural communities. Farmers have few resources and rely on traditional ICT such as radio, television and newspapers in order to get access to information relevant to agritourism. Most of the farmers mentioned that they rely on their own knowledge and creativity in order to come up with innovative ways of bringing agritourism activities to their farms. Interviewee 6 reported: *"...we obtain information relevant to agritourism from other farmers and agritourism field gatherings. They are useful sources of information, resources and ideas that could be helpful to our farming operations especially in rural communities..."* (Appendix D). Interviewee 1 said: *"...we have limited sources of information; therefore do not get enough information needed to successfully run our farms"* (Appendix D).

Finding 15: Farmers need information on best practices, market access, weather, financial information, accommodation, transport, attractions and new technologies.

The information needs of the interviewed farmers include: information on best practices, market access, weather conditions and financial markets. Figure 4.7 depicts the most important needs expressed by the interviewees. Following Figure 4.7 is a discussion of the findings on the needs as expressed by the farmers interviewed.

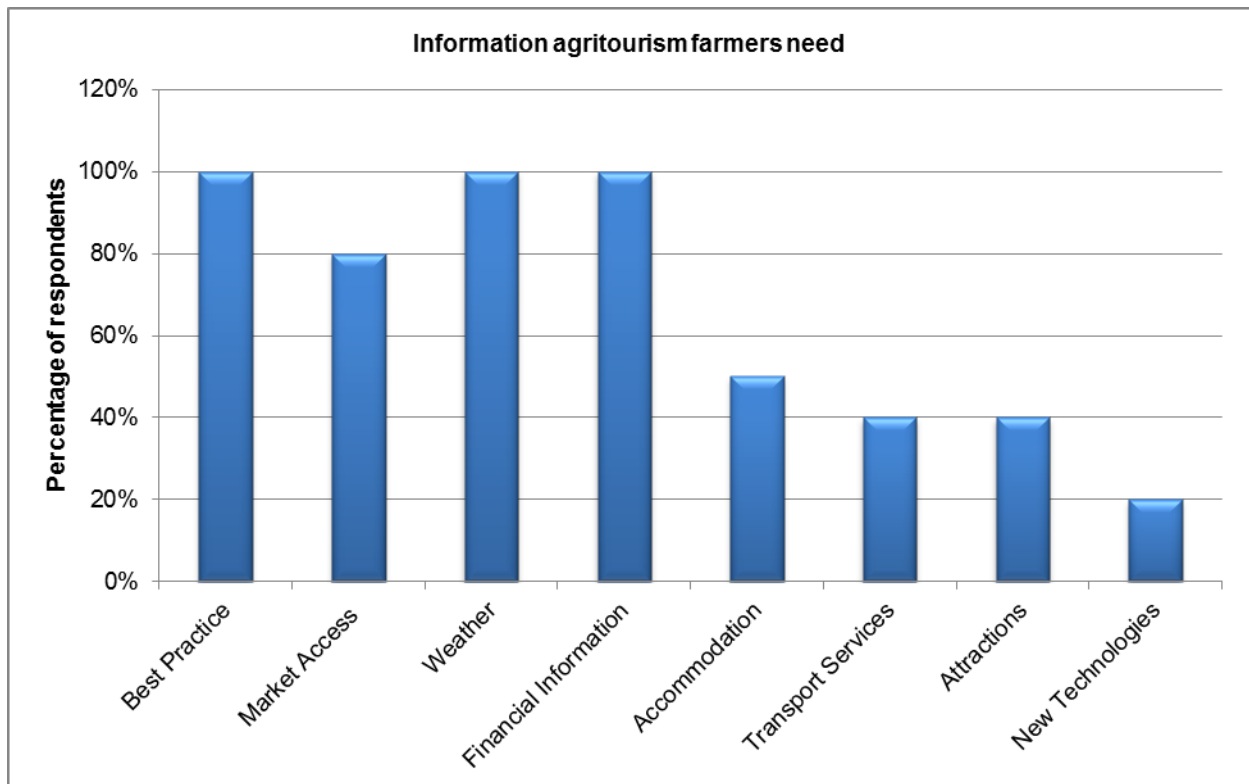


Figure 4.7: Information agritourism farmers need to successfully run their farms

4.3.2.1 Best practices

Information on best agritourism practices is viewed as crucial by all of the respondents interviewed. Respondents indicated that it is difficult to have access to relevant information on how to open and successfully run agritourism establishments. In this regard, interviewee 3 indicated that:

"...we need information materials or advices on how to start and sustain an agritourism operation successfully. I think a good business plan advice can help us set up strategic objectives that are needed for our business as well as help us identify challenges and objectives related to business operations..." (Appendix D).

In support of interviewee 3, interviewee 1 said:

“...we need proper information on the types of products and services that the agritourism industry offers to potential customers, Information on how to market our businesses, safety and security measures that need to be taken into consideration when running an agritourism farm as well as equipment needed for the establishments” (Appendix D).

Finding 16: Farmers need experts’ advice in order to successfully manage their agritourism establishments.

Finding 17: Lack of information on best practice can have a negative effect on agritourism business.

4.3.2.2 Market access

Information on market access is important to agritourism establishments. Interviewees indicated that because of limited ICT infrastructure in rural communities, farmers are having difficulties in gaining access to information on potential markets. In this regard, Interviewee 1 stated:

“...we need more information on agritourism markets, I think this information is available but it not documented properly that is why we are struggling to get access to it” (Appendix D).

The farmers also said that they do get information on tourists’ statistics through the MTEC, but the information is inadequate and not updated regularly. Interviewee 2 stated:

“...we need more information on the number of tourists visiting our country so that we know the numbers that we are targeting. This information will also give us a clear knowledge and understanding on the type of market that we need to attract, the products with high demand, prices that our target markets are willing to pay and we are charging”. (Appendix C).

Finding 18: Information on market access is lacking and farmers find it difficult to understand the behaviour and needs of the target markets.

4.3.2.3 Weather

Information on weather is regarded as one of the most important informational needs of the farmers in order to successfully run their agritourism businesses. All the farmers interviewed indicated that they require information on change of weather conditions. They also said that they still rely on traditional ICT media such as radio and television for access to information relevant to weather, while is limited and sometimes inaccurate. Interviewee 6 said:

“...information on weather is vital for agritourism businesses because we organise events and garden tours and some of these activities do not need to be scheduled during rainy season” (Appendix D).

Interviewee 4 added:

“...our decisions are still based on our own knowledge and creativity. I find information and resources that are provided by others farmers helpful because I no longer have trust on weather focused programs that are broadcasted on television. They provide us with limited information related to weather” (Appendix D).

Interviewee 5 stated:

“...I also don't trust weather focused programme anymore because they give us false information. They would tell us that it is going to rain and it doesn't. When it's dry we feel anxious of knowing if it will rain or not or how long it will take. We are even prepared to pay for this kind of service as long as they benefit from the information” (Appendix D).

Finding 19: Farmers need a platform that will provide them with accurate information on weather conditions.

4.3.2.4 Financial information

Financial information was identified as a significant challenge by the majority of farmers interviewed. Most of the farmers indicated that they were experiencing challenges in obtaining accurate information on their financial status. It is important for agritourism farmers to understand, analyse and make financial statements and also know accounting for their business. Interviewee 4 mentioned that:

“...cash flow from my farming operation is the only primary source of funding I have; therefore I need more information on other sources of finance so that I can be able to apply for credit loans from the banks, purchase material as well as to track their financial information...” (Appendix D).

With the growing demand for agritourism products and services, respondents mentioned that they incur large expenses. Therefore, it is necessary for agritourism farmers to invest in capital for improvements on their farms.

Finding 20: Obtaining correct financial information is a challenge for farmers and hinders their ability to manage their finances and farming operations.

4.3.2.5 Accommodation

Information on accommodation is viewed as important by agritourism farmers. Responses from the interviews reveal that farmers need information on the types of accommodation establishments their potential markets prefer. The availability of information on the accommodation needs to be on the electronic media as well. Interviewee 3 states:

“...I need information on accommodation in order to find out how I can satisfy the ever-changing needs and demands of the tourists visiting my farm without information (Appendix D). Interviewee 1 states: *“...We need information on different types of accommodation establishments that are available in for tourists so that they do not struggle when they visit our community”* (Appendix D).

Finding 21: Information on accommodation is important in satisfying the ever-changing demands of tourists for agritourism offerings.

4.3.2.6 Transport services

Transport is the most important factor that provides the necessary link between origin and destination areas as well as facilitation of movement of tourists. Responses from interviews revealed that getting access to information about transport services will help support farmers in order to make decisions regarding modes of travelling essential for their customers. Interviewee 5 argued that:

“...before travelling, tourists normally search for information about the different types of transport services they will be using, therefore it is important to make sure that they have

easy access to information on transport services available in our areas, the service providers and fares” (Appendix D).

Some of the farmers interviewed said that it is a major challenge accessing information on transport services available to them in rural communities. Telecommunication facilities that are needed are complex and costly. Interviewee 2 stated this issue as follows:

“...we have to rely on traditional methods such as newspapers, radio and other farmers in order to get access to information on transport services. Sometimes this information is not enough and end up offering our potential customers services that they do not like” (Appendix D).

Finding 22: The lack of transport information has a negative impact on the development of agritourism.

4.3.2.7 Attractions

Information on tourist attractions is important because it is the main reason tourists visit the area in the first place. Some of the respondents interviewed indicated that they need information on the attractions available in the country in order to recommend them to their friends and potential customers. In this regard, interviewee 2 said:

“...we need more information about the tourism attractions that are available in our country, their exact location and how to get there. This information is important to us because we will be able to inform our potential customers about them when they visit our farms, after all, visiting attractions are the reason why tourists travel” (Appendix D).

Some of the responses from the interviews reveal that it is important that information on tourism attractions is uploaded on electronic media as well as a central database and made available for everyone to have access to it. Interviewee 3 stated:

“...there are lots of untapped resources in the country that still needs to be nurtured and developed into vibrant tourist attractions, therefore it is important to have information on how to manage, develop and preserve them as well” (Appendix D).

Finding 23: Farmers need an electronic platform where they can upload and have access to information about tourism attractions.

Finding 24: There is a need for a centralised database serving the needs of farmers.

4.3.2.8 New technology

Information on the latest technology is very important to farmers in the agritourism industry. If farmers have information on these technologies, it will give them an opportunity to make informed decisions in order to successfully run their agritourism businesses. The responses from the interviews reveal that farmers are aware of, have interest in, and want to acquire modern technologies, but there are certain barriers that inhibit them from using it. Interviewee 4 advanced the following views:

“...some technologies are used by other farmers for production purposes, training, marketing and distribution by other farmers in agritourism, therefore I would also like to have these types of technologies in my farm...” (Appendix C).

Interviewee 3 supported this by saying that:

“...information resources on new technologies is limited in rural communities, some of us still know which specific technologies are used and for which purposes therefore have to travel to other neighbouring farm who are already making use of these modern technologies just to see and generate some ideas that might be useful and applicable to our farms ...” (Appendix D).

Finding 25: Farmers perceive information on new technology as important in order to enable them to take informed decisions.

4.3.3 Category 3: Factors that influence the use of ICT in agritourism

Sub-question 1.3: What are the factors that influence the use of ICT in agritourism?

Despite the importance of ICT for development, agritourism is faced with challenges that impact farmers' ability to gain income from the land. Respondents were of the view that factors that affect the use of ICT in agritourism consist of lack of training and ICT skills, high costs of ICT in general, age of the farmer, changes in weather conditions, ICT access, the

farmer's attitude towards ICT use, the size of the farm, poor telecommunication and network infrastructure as well as poor landscaping profiles.

In the respondents view, the majority of agritourism farmers in rural communities are unable to use modern technology because of ICT illiteracy. Interviewee 2 stated:

"...it is difficult for us to use these technologies because instructions are written in a language that we do not understand the only people who are able to use these technologies are the once who are able to read and write" (Appendix D).

Interviewee 5 said that he prefers to use traditional technology such as radio and television to access information relevant to agritourism:

"...modern technology is difficult to use, I don't know how to search for information that is why we rely on television and radio..." (Appendix D).

Finding 26: There is a need for training and education in ICT as farmers are not training to use ICT to benefit from opportunities it offers.

Cost plays a critical role in agritourism. Respondents said that high cost of ICT in general is a major factor that inhibits farmers from using these technologies. Farmers with off-farm income are more likely to adopt these technologies than those who rely on their farms as a main source of income. Interviewee 6 expressed his views as follows:

"...I don't see the need of using modern technologies because they are too expensive to us to access and use them". Interviewee 1 mention: *"there's always a problem where money is involved, income that we earn remain a major constraint to the use of modern technologies because we depend on it and ICT tools are expensive..."* (Appendix D).

Finding 27: High cost of technology hinders farmers adopting and using ICT.

Responses from the interviews reveal that the older generations of farmers are less likely to use modern technologies as they would be required to learn how to use most of these technologies. Interviewee 4 stated:

“...we are unable to use modern technologies because we do not know how to use them therefore prefer listening to radio and watching television in order to have access to information”. Interviewee 1 mentions: “...the younger generations of farmers prefer to use modern technologies such as smart phones and computers to access information on the internet because they are more educated than us”. (Appendix D).

Finding 28: Older farmers tend to be unwilling to use technology because of lack of training and perceived difficulty in acquiring such skill.

Respondents said that the uptake and use of ICT tools in rural communities is low and ICT has not been accessible to farmers in rural communities of Lesotho. In this light, interviewee 3 said:

“...It is so frustrating at times, although some of us want to adopt and use these technology, the prices are high and some of cannot afford to acquire therefore miss the most important and valuable information relevant to agritourism.” (Appendix D).

Finding 29: Farmers are experiencing difficulties gaining access to ICT tools.

Attitude is another contributing factor when it comes to ICT use, especially in rural communities. Farmers are reluctant to use ICT regardless of its availability. Some farmers interviewed said modern technology has a negative impact on the community. This is reflected in the views of interviewee 2 and 3:

“...I think it is a waste of money for me to buy modern technology that I am not going to use because most of our farming activities involve field work not office” (Appendix D). Interviewee 4 supported this assertion: “...I do not want to buy these modern technologies because they are the main drivers behind increased violence and crime in our community, people use smartphones in crime related activities. Television and internet also expose our children to immoral stuff...” (Appendix D).

Finding 30: Some farmers believe that ICT has a negative impact on the community in terms of crime and morals therefore will not use ICT.

Modern technology has been used to deliver effective services in the agritourism industry in other countries. Respondents interviewed mentioned that lack of access to broadband and

poor telecommunication hinders the effective use of ICT. This is captured by interviewee 3, who stated that:

“...Our communities are sparsely populated and most of our farms are located in areas that are far from main road, this makes it difficult for us to get access to ICT due to poor network coverage...”. Interviewee 1 said that: “there is no electricity in some parts of the country, which is a pre-requisite for ICT use and this makes it difficult for farmers to make use of ICT infrastructure in their communities...” (Appendix D).

Finding 31: Poor network infrastructure is a main factor constraining the use of ICT by farmers.

Finding 32: The specific location of farms has an impact on the use of ICT.

The size of the farm determines the uptake and use of modern ICT in agritourism. The responses from the interviews indicate that farmers with big farms are more likely to use modern technologies than those with small farms. This view was serenely expressed by interviewee 4:

“...our farming business is still growing and we don’t have enough funds to cover the cost of acquiring modern technologies maybe in near future not now” (Appendix D).

Finding 33: Large farms are more likely to use modern technologies in their business than owners of small farms.

4.3.4 Category 4: ICT use to enhance agritourism development in rural communities

Sub-question 1.4: How can ICT be used to enhance agritourism development in rural communities?

Respondents interviewed believe that ICT can be used as a marketing tool by agritourism farmers in order to increase their sales and profits. Interviewee 3 stated that:

“...agritourism farms that have access to internet can use this media as a platform to advertise their products and services to broader market and this will possibly help increase their sales and profits” (Appendix D).

Responses from the interviews reveal that ICT can be used to reduce production, communication as well as transportation costs. This view was expressed by interviewee 6:

“...Instead of wasting money travelling to different places in order to get access to information on agritourism offerings, farmers can make use of cellphone to exchange messages cheaply through use of short messages (sms) and voice calls to suppliers, customers, others farmers and agritourism stakeholders” (Appendix D).

Interviewee 1 supported interviewee 6 by stating that:

“... I think the use of internet can also lower the cost of searching for agritourism products and services through the electronic media...” (Appendix D).

Farmers use the limited available technologies to get access to information and disseminate knowledge. Interviewee 5 said that:

“...technologies that we have can be used for sharing and exchanging of information to different stakeholders that are involved in agritourism industry and disseminate knowledge that is needed for the successful running of the agritourism farms” (Appendix D).

Some farmers interviewed said that the use of modern technologies can help them perform certain activities such as online banking and ecommerce. Interviewee 4 stated that:

“...these technologies can help us search, compare and purchase agritourism products online. We can also do online banking and this helps us cut down our travelling cost and avoid wasting time doing paper work” (Appendix D). Interviewee 3 states: *“...Internet banking can also help us check our financial statements without leaving our offices...”* (Appendix D).

Finding 34: Farmers want to use ICT to improve the quality of their services (reduction of travelling costs, easy access of information) but there are challenges they have to overcome.

4.3.6 Summary of interviews with farmers

It is evident from the findings (Table 4.2) that agritourism farmers in rural communities are aware of certain technologies being used to share and exchange information as well as disseminate knowledge across the agritourism industry. Farmers are also using some of

these technologies, but there are certain barriers that inhibit their use. These include: poor internet connection, network coverage as well as high costs. Due to these barriers, farmers do not have ready access to information relevant to agritourism which they need in order to successfully run their farms. The majority of the farmers have tended to rely on technologies such as radio as they see it as an effective method of information sharing.

Table 4.2: Summary of the findings on farmers

Number	Findings
Finding 1	Farmers are aware of ICT tools and use some of them on their farms
Finding 2	ICT access challenges faced by farmers make it difficult to gain the benefits and explore the opportunities that ICT offers them
Finding 3	Poor internet connections and access are important constraints for agritourism development
Finding 4	Connectivity via mobile devices to the mobile networks is a stumbling block in the development of agritourism
Finding 5	Agritourism does not get enough exposure on television in order to promote the agritourism products to a wider audience
Finding 6	Farmers regard radio as an effective method of information sharing
Finding 7	Landline telecommunication is still been seen as the most reliable way of communication for farmers
Finding 8	Some farmers are skeptical about the value that technology offers and view it as a possible fraud tool
Finding 9	Many farmers do not have internet access and do not use computers to gather information or promote their agritourism enterprises
Finding 10	Although farmers view the internet as important for agritourism, a lack of internet access due to ICT infrastructure hinders growth of the industry
Finding 11	The high cost of digital technology is a main facto constraining the use of ICT by farmers
Finding 12	Fax technology is used by some farmers and seen as a supporting tool for information sharing
Finding 13	Voice recorders are seen as useful tools by farmers and can improve quality of information
Finding 14	The lack of financial resources hinders the use of some potentially useful technologies in agritourism
Finding 15	Farmers need information on best practices, market access, weather, financial information, accommodation, transport, attractions and new technologies
Finding 16	Farmers need experts' advices in order to successfully run their agritourism establishments
Finding 17	Lack of information on best practice can have a negative effect on agritourism business
Finding 18	Information on market access is lacking and farmers find it difficult to understand the behaviour and needs of the target markets
Finding 19	Farmers need a platform that will provide them with accurate information on the weather conditions
Finding 20	Obtaining correct financial information is a challenge for farmers and hinders their ability to manage their finances and farming operations

Finding 21	Information on accommodation is important in satisfying the ever-changing demands of tourist for agritourism offerings
Finding 22	The lack of transport information has a negative impact on the development of agritourism
Finding 23	Farmers need an electronic platform where they can upload and have access to information about tourism attractions
Finding 24	There is a need for centralised data base serving the needs of the farmers
Finding 25	Farmers perceive information on new technology as important in order to give them the ability to take informed decisions
Finding 26	There is a need for training and education in ICT, as farmers are not trained to utilise ICT to benefit from the opportunities ICT offers
Finding 27	High cost of technology hinders farmers adopting and using ICT
Finding 28	Older farmers tend to be unwilling to use technology because of lack of training and perceived difficulty in acquiring such skills
Finding 29	Farmers are experiencing difficulties to gain access to ICT tools
Finding 30	Some farmers believe that ICT has a negative impact on the community in terms of crime and morals, therefore will not use ICT
Finding 31	Poor network infrastructure is a main factor constraining the use of ICT by farmers
Finding 32	The specific location of farms has an impact on the use of ICT
Finding 33	Large farms are more likely to use modern technologies in their business than owners of small farms
Finding 34	Farmers want to use ICT to improve the quality of their services (reduction of travelling costs, easy access of information) but there are challenges that they have to overcome

4.4 Analysis of data on the potential use of ICT to enhance agritourism: farm employees

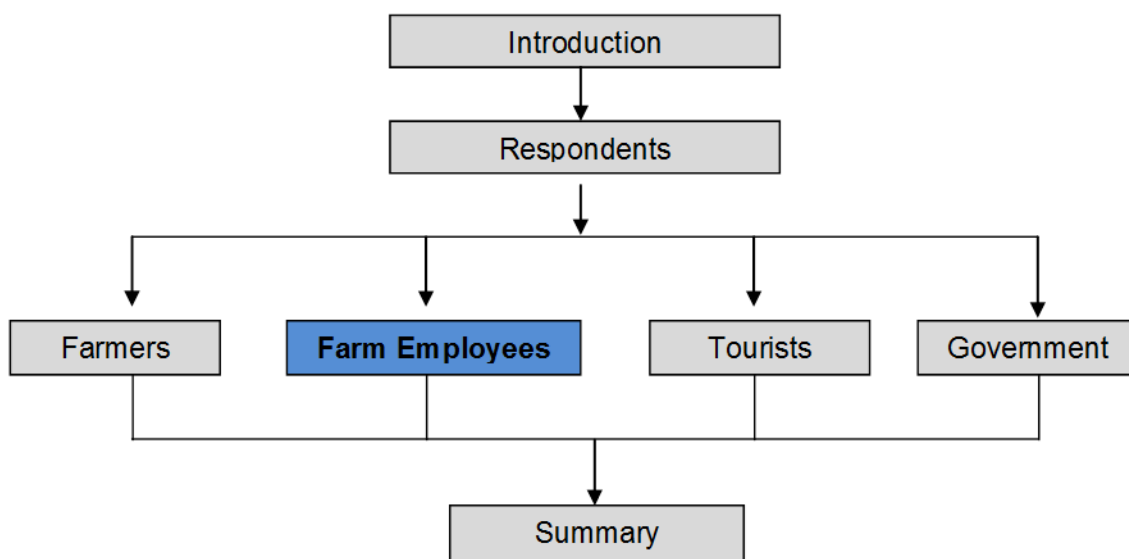


Figure 4.8: Farm employees

In this section the data collected from farm employees are analysed under the specific sub-research questions applicable to the specific section.

4.4.1 Category 1: Technologies agritourism farmers use in rural communities

Sub-question 1.1: What technologies do agritourism farmers use in rural communities?

Eight farm employees were asked what types of technologies are being used by farmers in agritourism. The responses indicated that farm employees agree with the farmers on the types of technologies that are being used in agritourism. These consist of cellphones, television, radio, landline phones, fax machines, computers and the internet.

“...Majority of farmers use radios, television, cellphones, landline phone for business purposes and those who have access to internet use computers to access information on the internet...” (Interviewee 8; Appendix E).

Finding 35: Farm employees agree with farmers in terms of the technologies that are being used in agritourism.

4.4.2 Category 2: Information agritourism farmers need to successfully run their farms

Sub-question 1.2: What information do agritourism farmers need to successfully run their farms?

Farm employees see information as the most valuable input in agritourism and agree with the farmers that they need information in order to successfully run their businesses. The responses from farm employees interviewed indicate that they need information on, for example, the weather. Regarding this, interviewee 9 stated:

“...Farmers are faced with a number of threats from climatic variances which include heavy rainfall and drought, therefore need more information on weather...” (Appendix E).

Interviewees also said that it is necessary for farmers to have access to information about tourist attractions, transport, cuisine and accommodation. This is reflected in the views expressed by interviewee 7:

“...this type of information helps the farmers to be able to satisfy the needs of the potential customers” (Appendix E).

Interviewees agreed with the farmers that they need information on the latest technologies so that they able adopt and disseminate knowledge to broader markets using these technologies. Interviewees indicated that farmers rely on traditional ICTs such as radio and television in order to access information relevant to agritourism. Farmers are willing to pay for extra services that will help them get more information needed to be successful in agritourism.

Finding 36: Farm employees agree with the farmers on information needs in order to successfully run an agritourism business.

Finding 37: According to farm employees, farmers are willing to pay for ICT service, if it is available.

4.4.3 Category 3: Factors that influence the use of ICT in agritourism

Sub-question 1.2: What are the factors that influence the use of ICT in agritourism?

The responses from the interviews with the farm employees correspond with the farmers with regard to factors that affect the potential use of ICT in agritourism. Interviewee 11 said:

“...Farmers are unable to use some of these ICT in their agritourism businesses because of poor network coverage and availability of infrastructure that assist in deployment of these technologies” (Appendix E). Interviewee 13 mentioned: “...Some farmers are unable to get access to ICT tools because they are expensive and acquire as well as to maintain” (Appendix E).

The responses from other farmer employees indicate that farmers in rural communities rely on their farms as the main sources of income and are unable to use modern technologies for farming purposes.

Interviewees said that some farmers are reluctant to use modern technologies because they do not see the need to use these technologies as their main responsibilities involve field work. In connection with this, interviewee 9 stated:

“...I still don’t see the need to use some of these technologies; they are slowly replacing the human factor and I prefer to negotiate with suppliers and buyers face to face other using technology. It speeds up decision making process because I am able to get response at the same time” (Appendix E: page 137).

Interviewee 14 stated that:

“...technologies such as internet, cellphones and television promote theft and violence in our community and ‘sometimes’ the content exposes the youth to immoral stuff...” (Appendix E).

Interviewee 12 mentioned: *“...the poor landscape and network infrastructure are the main problem that hinders ICT use in rural communities”* (Appendix E).

Finding 38: High cost, income, attitude, poor landscape and network infrastructure are the main factors that constraint the use of ICT by farmers, according to farm employees.

4.4.4 Category 4: ICT use to enhance agritourism development in rural communities

Sub-question 1.4: How can ICT be used to enhance agritourism development in rural communities?

Different types of technologies are available that can help promote sustainable development as well as enhance the livelihoods of farmers in rural communities if they are effectively used by agritourism farmers. Responses from farm employees indicate that in order to enhance development in agritourism, ICT tools have to be used in an appropriate manner to disseminate knowledge and exchange information relevant to agritourism through electronic media. In this light, interviewee 13 stated that:

“... Farmers who have access to ICT must be able to use it to get access to accurate information relevant to agritourism and be able to deliver critical information to suppliers, customers and other stakeholders in agritourism industry” (Appendix E).

Interviewee 14 added that:

“...People want to see tangible benefits of products before they could make use of them. ICT should be able to enhance efficiency and help farmers build online relationships with their potential consumers, suppliers and other stakeholders in

agritourism industry as well as helping farming to be able to increase their sales and profits...” (Appendix E).

Further, interviewee 10 said: *“...Technologies such as cellphones, faxes and internet should be able to reduce high transaction, communication and travelling costs; farmers can also use electronic media such as social media networks to promote their products and services and do online banking. In that way they will be able to enhance development in agritourism” (Appendix E).*

Farmers' employees were of the view that there is a lack of telecommunication infrastructure in rural communities and they need assistance to improve telecommunication infrastructure. Interviewee 11 said:

“The availability of broadband and faster internet connectivity can help farmers to deliver critical information on agritourism to broader online market on time...” (Appendix E). Another farm employee indicated there is a need for functional ICT literacy: *“The majority of farmers in rural communities do not know how to use modern technologies. They need training and support on how these technologies can be used to enhance development...” (Interviewee 8; Appendix E).*

Finding 39: Farmers need ICT training to increase the effective and efficient use of the available technologies to them, in the view of farm employees.

Finding 40: According to farm employees, the lack of sufficient broad band and internet access hinders the growth of agritourism.

4.4.5 Summary on farm employees

Farm employees play an important role in agritourism industry because they perform certain agritourism tasks assigned to them by the farmers. Responses from the farm employees interviewed were the same as those of the farmers interviewed (Table 4.3). They agreed with the farmers regarding ICT use in agritourism. The farm employees also added that farmers need information on local cuisine, especially, as tourists is eager to have local experiences. High cost and lack of infrastructure remain the major constraints for ICT in rural communities. As such training on ICT use is highly recommended.

Table 4.3: Summary of findings on farm employees

Number	Findings
Finding 35	Farm employees agree with farmers in terms of the technologies that are being use in agritourism
Finding 36	Farm employees agree with the farmers on the information needs in order to successfully run an agritourism business
Finding 37	According to farm employees, farmers are willing to pay for ICT service if it is available
Finding 38	High cost, income, attitude, poor landscape and network infrastructure are the main reasons that constraint the use of ICT by farmers, according to farm employees
Finding 39	Farmers need ICT training to increase the effective and efficient use of the available technologies to them, in the view of farm employees
Finding 40	According to farm employees, the lack of sufficient broad band and internet access hinders the growth of agritourism

4.5 Analysis of data on potential use of ICT to enhance agritourism: tourists

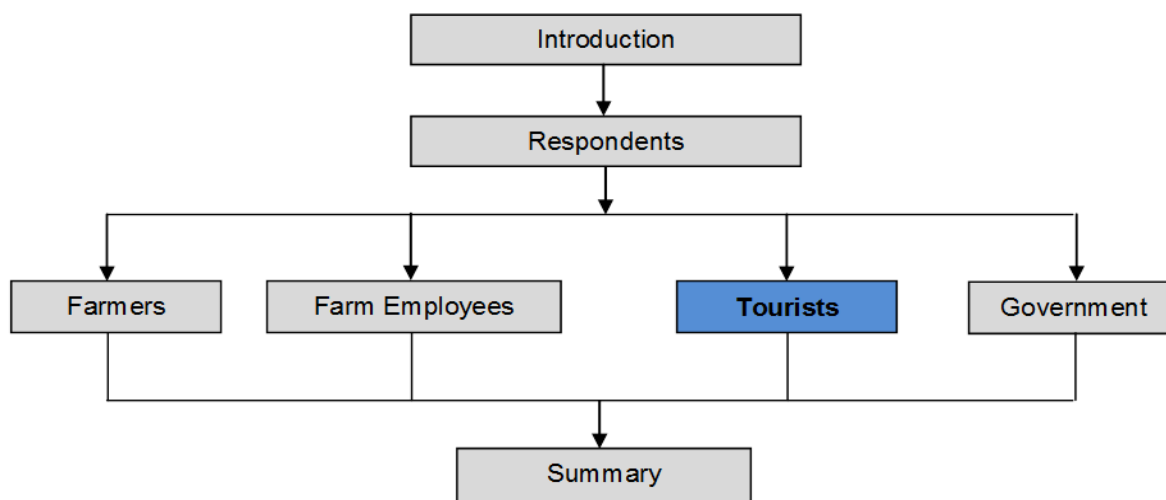


Figure 4.9: Tourists

Findings on the potential use of ICT to enhance agritourism in Lesotho from six tourists who were present on the farms during the data collection process of the study, are presented in the next section.

4.5.1 Category 1: Technologies agritourism farmers use in rural communities

Sub-question 1.1: What technologies do agritourism farmers use in rural communities?

As tourists are knowledgeable of technologies being used in agritourism, the question was rephrased as: What technologies should agritourism farmers use to enhance the development of agritourism in Lesotho?

Six tourists were on the farms during the data collection process. They were interviewed and asked what technologies farmers should use in agritourism. Responses from these tourists show that they fully agreed with the farmers and farm employees on technologies the farmers should be using. Interviewee 19 stated that:

“...Agritourism farmers in rural communities are using several technologies for both business and private purposes. Majority of these farmers own radios, television sets, landline phones, cellphones and others are using computers, internet, faxes, digital cameras and voice recorders for farming purposes” (Appendix F).

Interviewee 15 added that:

“...Although several technologies are available in agritourism, farmers in rural communities do not make use of all of these technologies because they do not know how to use them. Technologies such as computers and internet require training and farmers cannot afford the cost of training...” (Appendix F).

Finding 41: Tourists agree with the farmers and farm employees that farmers use different types of technologies such as cellphones, radio, landline phone and television on their farms.

4.5.2 Category 2: Information agritourism farmers need to successfully run their farms?

Sub-question 1.3: What information do agritourism farmers need to successfully run their farms?

The tourists interviewed indicated that the following information is needed in order to successfully run an agritourism business: information on accommodation establishments, means of transport, agritourism events and gatherings, cuisine, market prices, change in weather conditions, banking services and new technologies being used in order to gain access to information relevant to agritourism. In line with this, interviewee 16 said:

“...Tourists are visual minded people and before making any travel arrangements, they always want to see what they are purchasing. Before making travel arrangements, we want to see what we are purchasing. Farmers have to provide us with information regarding their offerings ...” (Appendix F).

Finding 42: Tourists agree that farmers need information on accommodation, transport, attractions, events, cuisine, market prices, weather, banking services and new technologies to successfully run agritourism business.

4.5.3 Category 3: Factors that influence the use of ICT in agritourism in rural communities

Sub-question 1.2: What are the factors that influence the use of ICT in rural communities?

The responses from the tourists interviewed were similar to those of the farmers and farm employees interviewed. Tourists agreed with the farmers and farm employees on the factors affecting ICT use. The factors identified were: accessibility of technologies in rural communities, educational background of the farmers, knowledge and skills, lack of training for farmers and employees who cannot use ICT, high cost of technologies, poor infrastructure and the attitude towards ICT use. The view of interviewee 20 is relevant:

“...Most of farmers in rural communities are aware of the importance and benefits that comes with the use of technologies for business purposes; however I think they are somehow affected by a number of barriers that inhibits them from using these

technologies. High costs of ICT in general are the main barrier, followed by accessibility and skills...” (Appendix F).

Finding 43: Tourists believe that the high cost and lack of knowledge are the main factors that hinder the use of ICT by farmers in agritourism.

4.5.4 Category 4: ICT use to enhance agritourism development in rural communities

Sub-question 1.4: How can ICT be used to enhance agritourism development in rural communities?

The tourists also agreed with other interviewees on the use of ICT to enhance agritourism in rural communities. Interviewee 19 stated that:

“...Agritourism farmers in rural communities can use modern technologies such as the internet as a marketing platform to promote their agritourism products and services...” (Appendix F: page 138). Interviewee 16 contributed by stating: *“...I think it will also be useful for farmers to have a platform where they can easily access accurate information relevant to agritourism and be able to communicate and interact with other users on the electronic media...”* (Appendix F).

Some of the tourists said that some farmers view traditional ICT such as radio and television as an effective method of information sharing. This is because they do not have knowledge on how modern ICT is being used in order to enhance efficiency. This is reflected in the views of interviewee 17:

“...Navigating the internet can be complicated to someone who has does not have an idea on how to operate a computer. Therefore there is a need for rural farmers to be trained on how to use these modern technologies so that they can ...” (Appendix F).

ICT is a critical vehicle for agritourism development because it can permeate all aspects of life if it is used fully and effectively by farmers. Some tourists stated that electricity is rare in other places and it would be helpful if government is involved in helping farmers gain access to electricity so that they can use some of these technologies. Reflecting these views, interviewee 15 stated that:

“...ICT equipment such as computers need electricity to run but some farmers do not have access to electricity in their farms therefore will not be able to use and gain the benefits that ICT can offer...” (Appendix F).

Finding 44: Tourists believe that electronic media can be used as a marketing tool by farmers to promote their agritourism offerings.

4.5.5 Summary of interviews with tourists

All the tourists interviewed agreed with the farmers and farm employees on the technologies that should be used in order to help enhance development in agritourism. They also highlighted costs and lack of knowledge on how to use of some of the technologies as the main barriers towards ICT use in rural communities. Tourists suggested the use of electronic platform to agritourism farmers as a tool to advertise their products and services as this would help them search, compare and purchase products and services on an electronic media.

Table 4.4: Summary of the findings of the tourists

Number	Findings
Finding 41	Tourists agree with the farmers and farm employees that farmers use different types of technologies such as cellphones, radio, landline phone and television on their farms
Finding 42	Tourists agree that farmers need information on accommodation, transport, attractions, events, cuisine, market prices, weather, banking services and new technologies to successfully run agritourism business
Finding 43	Tourists believe that the high cost and lack of knowledge are the main reasons that hinder the use of ICT by farmers in agritourism
Finding 44	Tourists believe that electronic media can be used as a marketing tool by farmers to promote their agritourism offerings

4.6 Analysis of data on potential use of ICT to enhance agritourism: government

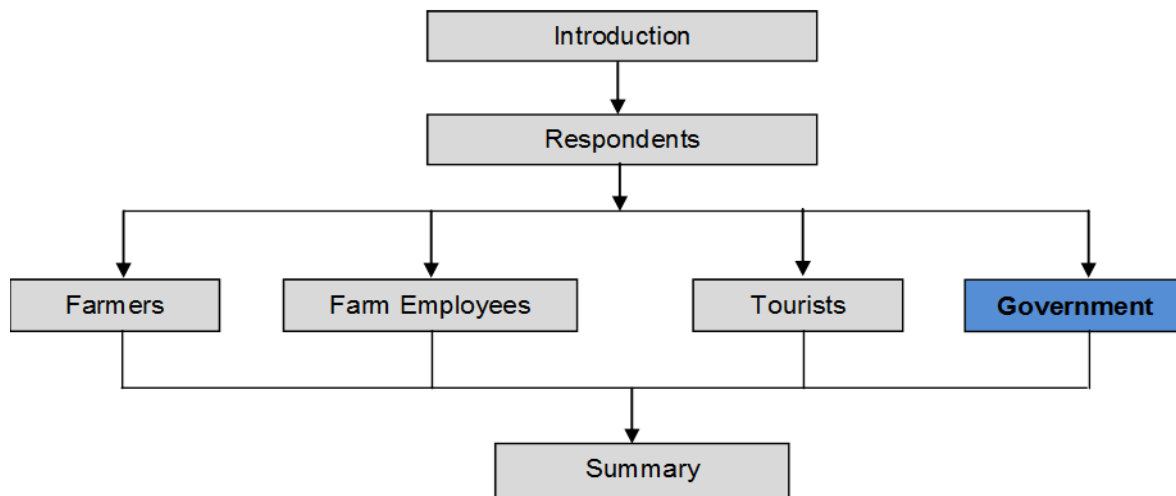


Figure 4.10: Government

In this section the data collected from government (Ministry of Tourism Environment and Culture) are analysed under the specific sub-research question applicable to the specific section.

4.6.1 Category 1: Technologies agritourism farmers use in rural communities

Sub-question 1.1: What technologies do agritourism farmers use in rural communities?

Three officials from the Ministry of Tourism, Environment and Culture in Lesotho were interviewed and asked what types of technologies are being used by agritourism farmers in rural communities. The responses from the interviews indicate that government also agrees with other respondents on the types of technologies that are being used by farmers. According to respondents, the most accessible types of ICT in rural communities includes: radio, television, computers, landline phones, fax machines, cellphones and the internet. This is reflected in statement made by interviewee 21 and 22:

Interviewee 21 said: *“...although majority of farmers use different types of technologies in their farming businesses, it does not mean they use them to their fully extend. Access to electricity is some communities hinder the usage and access to some of these technologies...”* and *“majority of agritourism farmers in rural communities rely on cellphone, compared to those who use other technologies at work place, the reason being its affordability as well as mobility”* (Appendix G).

“...some farmers find the use of landline phone, television and radio as a better means of communication and information sharing because they are easier to use regardless of their age, education status, income even mobility. These types of technologies save them time and money” (Interviewee 22; Appendix G).

Finding 45: In the view of MTEC, lack of electricity hinders the use of some of ICT by farmers to its full extent.

Finding 46: ICTs such as landline phone, radio and television are considered better alternatives for farmers because they are easier to use, save time and money, according to MTEC.

4.6.2 Category 2: Information agritourism farmers need to successfully run their farms

Sub-question 1.2: What information do agritourism farmers need to successfully run their farms?

Respondents from the government agreed with other respondents on the information agritourism farmers need in order to successfully run their farms. Interviewee 23 stated that:

“...farmers need information on the best practices. This information includes knowing and getting access to relevant information regarding the policies and regulations that govern the establishment of an agritourism farm...” (Appendix G). Also, *“Farmers need to have proper information on where and how to register their farms, information on taxes and remuneration of farm workers as well as legal issues pertaining to venturing into this type of business”* (Interviewee 22; Appendix G).

Finding 47: Information on policies and regulations are critical towards establishment of an agritourism farm.

Respondents interviewed also said that farmers need information regarding proper communication medium through which information relevant to agritourism is flowing. Interviewee 21 stated that:

“...currently most of our rural farmers get access to information through radio, television, others farmers and family members, these media outlets are inadequate and provide them

with limited information that can assist them move confidently into more productive strategies” (Appendix G).

Respondents were of the view that farmers need information on government and private sector funding and they should be able to know where and how to gain access to this kind of information. This is reflected in the statement made by interviewee 23:

“...majority of farmers in rural communities are struggling to get access to government funding because they do not use proper information channels. This is because channels such as internet are expensive to use especially to farmers whose means of income is from their farming businesses. Some farmers find it too expensive to purchase, use or even maintain these technologies” (Appendix G).

Finding 48: Lack of access to information relevant to agritourism is a major constraint towards agritourism development, according to MTEC.

4.6.3 Category 3: Factors that influence ICT use in agritourism

Sub-question 1.2: What are the factors that influence the use of ICT in agritourism industry?

The responses from government officials indicate that there are factors that influence the use of ICT by agritourism farmers in rural communities. Respondents interviewed said that factors such as lack of ICT skills, privacy concerns, poor ICT infrastructure, limited financial resources, availability of ICT, education, location and legal requirements are the main barriers for ICT use. Regarding resources, interviewee 21 stated:

“...majority of farmers in rural communities do not have funds to purchase modern technologies, they find it expensive to use and maintain therefore do not consider owning some of these technologies...” (Appendix G).

Finding 49: In the view of MTEC, some farmers do not consider the need to own ICT as a priority because of the high cost of purchase and maintenance in general.

Interviewee 22 stated that: *“...some of the farmers in rural communities do not know how to make use of certain technologies. This is because most of their work involves field work and they never had motivation to learn...” (Appendix G).* Interviewee 21 also said that: *“...most of*

the farms are located in remote areas where ICT is not easily accessible as a result the information that is needed by farmers does not reach rural areas...

In order to assist these farmers with regard to ICT use, they first have to familiarise themselves with the use of these technologies as well as the potential applications and content that is appropriate for their particular situation.

Finding 50: Some farmers do not see ICT as important. This is because of the lack of interest and knowledge, according to MTEC.

Majority of respondents indicated that the level of education is also a critical factor when it comes to ICT use by agritourism farmers, especially in rural communities where farmers do not have higher educational qualifications. Interviewee 20 stated:

“...from my experience not only farmers but people with higher educational attainment are likely to know and make use of ICT more than the ones with less education...” (Appendix G).

This finding implies that more efforts need to be made to bridge the gap through access as well as ICT use as early as, possibly, primary school in order for people to gain skills and knowledge in the use of these technologies.

Finding 51: MTEC is of the opinion that without education and training, farmers cannot derive the benefits and opportunities that ICT offers.

4.6.4 Category 4: ICT use to enhance development in agritourism

Sub-question 1.4: How can farmers use ICT to enhance agritourism development?

Respondents interviewed mentioned that agritourism farmers in rural communities can make use of ICT to gain access to information that is relevant to agritourism, especially in rural communities. Interviewee 23 stated:

“...majority of farmers own radios and television compared to other technologies and can use these technologies to gain access to information...” (Appendix G).

Technologies such as radio and television provide necessary information, are easily accessible to remote and rural communities and regarded as the most powerful tools by rural communities.

Finding 52: MTECH believes that ICTs such as radio and television are easily accessible and farmers can use them to gain access to information relevant to agritourism.

Technologies such as the internet can be used as a platform for farmers to promote and advertise their products and services. Residing predominantly in rural communities, farmers are strongly advised to use electronic media such as the internet in order to advertise their products to a wider market. Interviewee 22 stated that:

“...Most of the tourists do not know about the existence of agritourism farms, they can gain access to information on these farms on the internet...” (Appendix G). Interviewee 23 said that: ... *“Government assist some of the enterprises in the country with to marketing and promotions because they are aware that majority of the businesses in the country do not have access to modern technologies”* (Appendix G).

Finding 53: Farmers can also use the internet as a platform to promote and advertise their products and services to wider market.

Finding 54: Government is responsible for the marketing and promotion of agritourism products in the country.

The majority of respondents recommended that the farmers use ICT to build relationships with potential customers, suppliers and other stakeholders involved in the industry through the use of electronic media. In line with this, interviewee 21 said:

“Farmers who have access to the internet can use it to search and compare their products and prices with their competitors, do transactions as well as bank on the internet...” (Appendix G).

Finding 55: Electronic media can play an important role towards the success of the agritourism businesses.

4.6.5 Summary of interviews with government officials

Government interviewees agreed with other respondents (farmers, farm employees and tourists) on technologies being used by agritourism farmers in rural communities (Table 4.5). They also believe that some of these technologies are better alternative to farmers because they are affordable, easier to use, save time and money. Although some of them are considered useful, barriers such as electricity, high cost, government legislation, lack of ICT skills and poor infrastructure remain major constraints for access and use. As such, farmers do not see their importance and need to have them. The government of Lesotho is responsible for marketing agritourism products in the country. Despite their efforts, the potential of agritourism has not been fully recognised internationally because of the lack of modern ICT. Government recommend farmers to make use of available technologies to get access to information relevant to agritourism, build relationships with customers, suppliers and stakeholders as well as taking advantage of the internet to promote and advertise their products and services to a wider range of market.

Table 4.5: Summary of findings on the government

Number	Findings
Finding 45	In the view of MTEC, lack of electricity hinders the use of some of ICT by farmers to its full extent
Finding 46	ICT such as landline phone, radio and television are considered better alternative for farmers because they are easier to use, save time and money, according to MTEC
Finding 47	Information on policies and regulations is critical towards establishment of an agritourism farm
Finding 48	Lack of access to information relevant to agritourism is a major constraint towards agritourism development, according to MTEC
Finding 49	In the view of MTEC, some farmers do not consider the need to own ICT as a priority due to high cost of purchase and maintenance in general
Finding 50	Some farmers do not see ICT as important. This is due to lack of interest and knowledge, according to MTEC
Finding 51	MTEC is of the opinion that without education and training, farmers cannot derive the benefits and opportunities that ICT offers
Finding 52	MTEC believes that ICTs such as radio and television are easily accessible and farmers can use them to gain access to information relevant to agritourism
Finding 53	Farmers can also use internet as a platform to promote and advertise their products and services to wider market
Finding 54	Government is responsible for the marketing and promotion of agritourism products in the country

4.7 Summary of the findings

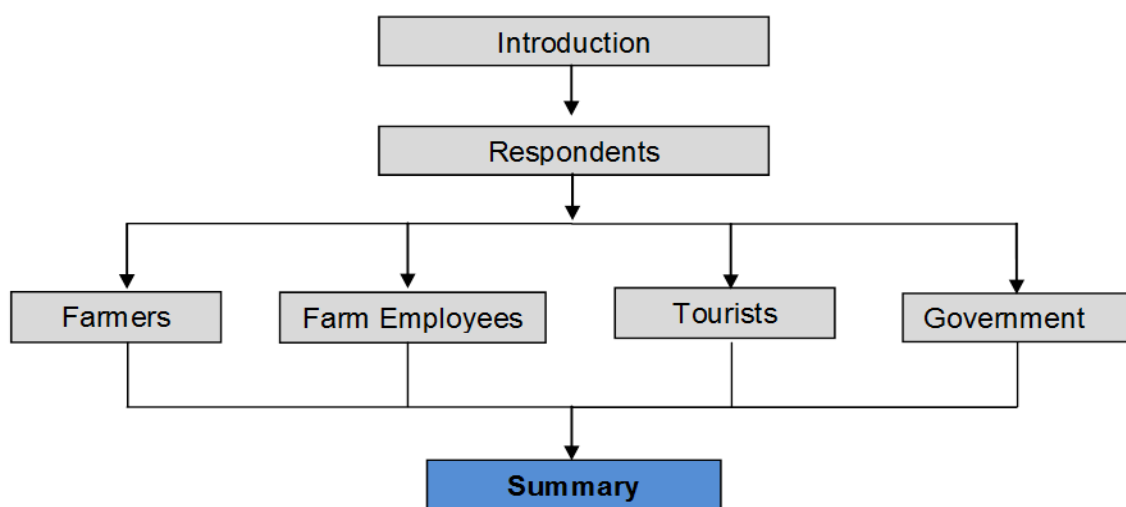


Figure 4.11: Summary

From the findings in Table 4.6, themes were developed. Nine themes were identified after evaluating the findings. The themes are ICT awareness and knowledge, access to ICT, ICT infrastructure, ICT usefulness, information, training, finance, security and privacy and the landscape. The findings and the themes are combined into one table (Table 4.6).

Table 4.6: Themes and findings

Themes	Findings Number	Findings
ICT awareness and knowledge	Finding 1	Farmers are aware of ICT tools and use some of them on their farms
	Finding 8	Farmers do not have internet access and do not use computers to gather information or promote their agritourism enterprises
	Finding 34	Farmers want to use ICT to improve the quality of their services (reduction of travelling costs, easy access of information), but there are challenges that they have to overcome
	Finding 35	Farm employees agree with farmers in terms of the technologies that are being used in agritourism
	Finding 36	Farm employees agree with the farmers on the information needs in order to successfully run an agritourism business.
	Finding 41	Tourists agree with the farmers and farm employees on the types of technologies that agritourism farmers use in rural communities
	Finding 42	Tourists agree that farmers need information on accommodation, transport, attractions, events, cuisine, market prices, weather, banking services and new technologies to successfully run agritourism business
ICT access	Finding 2	ICT access challenges faced by farmers make it difficult to gain the benefits and to explore the opportunities that ICT offers them
	Finding 14	The lack of access to ICT hinders the growth of agritourism in Lesotho
	Finding 10	Although farmers view the internet as important for agritourism, lack

		of internet access due to ICT infrastructure hinders growth of the industry
	Finding 29	Farmers are experiencing difficulties gaining access to technology-related services
	Finding 15	Farmers need an electronic platform where they can access information about tourism attractions
	Finding 24	There is a need for a centralised database serving the needs of farmers
	Finding 10	High cost of digital technology is the main factor constraining the use of ICT by farmers
	Finding 37	According to farm employees farmers are willing to pay for ICT service, if it is available
	Finding 42	Farm employees agree with farmers on all aspects of technology use as mentioned by farmers when interviewed
ICT infrastructure	Finding 3	Poor internet connection is an important constraint for agritourism development
	Finding 4	Connectivity via mobile devices to the mobile networks is a stumbling block in the development of agritourism
	Finding 11	Although farmers view the internet as important for agritourism, lack of internet access due to ICT infrastructure hinders growth of the industry
	Finding 31	Lack of adequate technological infrastructure and poor network coverage hinders the effective use of ICT in the development of agritourism
	Finding 33	Large farms are more likely to use modern technologies in their business than small farms
	Finding 31	Poor network infrastructure is the main factors constraining the use of ICT by farmers
	Finding 40	Broadband and internet connectivity is required to access the internet
	Finding 45	Lack of electricity hinders the use of ICT to its full extent
ICT usefulness	Finding 7	Landline telecommunication is still seen as the most reliable way of communication
	Finding 13	Voice recorders are seen as useful tools and can improve quality of information
	Finding 28	Older farmers are unwilling to use technology because of lack of training and perceived difficulty in acquiring such a skill
	Finding 30	Some farmers believe that ICT has a negative impact on the community
	Finding 25	Farmers perceive information on new technology as important in order to enable them take informed decisions
	Finding 44	Tourists believe that electronic media can be used as a marketing tool by farmers to promote their agritourism offerings
	Finding 46	ICTs such as radio and television are considered better alternatives for farmers because they are easier to use, save time and money
	Finding 52	ICTs such as radio and television are easily accessible and farmers can use them to gain access to information relevant to agritourism
	Finding 53	ICT can be used as a platform to promote and advertise agritourism products and services
Information	Finding 6	Farmers regard radio as an effective method of information sharing
	Finding 12	Fax technology is widely used and seen as a supporting tool for

		information sharing
	Finding 15	Farmers need information on best practices, market access, weather, financial information, accommodation, transport, attractions and new technologies
	Finding 16	Farmers need experts' advice in order to successful run their agritourism establishments
	Finding 17	Lack of information on best practice can have a negative effect on agritourism business
	Finding 18	Information on market access is lacking and farmers find it difficult to understand the behaviour and needs of the target markets
	Finding 19	Farmers need a platform that will provide them with information on weather conditions
	Finding 21	Information on accommodation is important in satisfying the ever-changing demands of tourists for tourism offerings
	Finding 17	Lack of information has a negative impact on the development of agritourism in Lesotho
	Finding 48	Lack of access to information is a major constraint towards agritourism development
Training	Finding 51	Without education and training, farmers cannot derive the benefits and opportunities that ICT offers
	Finding 39	Farmers need ICT training to be able to use some of the technologies
	Finding 26	The level of education affects the farmer's ability to use ICT effectively, therefore training is recommended
Finance	Finding 12	The high cost of digital technology is the main factors inhibiting the use of digital cameras
	Finding 14	Lack of financial resources hinders the use of some potentially useful technologies in agritourism
	Finding 27	High cost of technology hinders farmers from using ICT
	Finding 20	Obtaining correct financial information is a challenge for farmers and hinders their ability to manage their finances
	Finding 11	High cost is the main factors that constrains the use of ICT by farmers
	Finding 43	Tourists believe that high cost and lack of knowledge are the main factors that hinder the use of ICT by farmers in agritourism
	Finding 50	Some farmers do not see ICT as important. This is due to lack of interest and knowledge
Security and privacy	Finding 8	Some farmers are skeptical about the value that technology offers and see as a possible fraud tool
Landscape	Finding 31	The specific location of farms has a negative and positive impact on the use of ICT
	Finding 38	Poor landscape and network infrastructure are the main factors that constraint the use of ICT by farmers
Legislation	Finding 47	Legislation information is important towards establishment of agritourism business
	Finding 54	Government is responsible for the marketing and promotion of agritourism products in the country

4.7.1 Headline findings: farmers

Farmers in rural communities acknowledged that technology plays a major role in agritourism by promoting sustainable development as well as enhancing the livelihoods of farmers in agritourism. They were aware of certain technologies that may be used in agritourism, but they highlighted costs and level of education as major barriers that inhibit the use of modern technologies in rural communities. They were aware of benefits presented by ICT use. The lack of ICT infrastructure is a negative factor in the growth of the agritourism industry.

4.7.8 Headline findings: farm employees

Farm employees agreed with the farmers on information farmers need in order to successfully run their agritourism businesses. Employees also highlighted that most of the work farmers do involves fieldwork. Some farmers do not see the need of having modern technologies because they are expensive to purchase and maintain. Farm employees also highlighted that some farmers are not interested in learning about these specific technologies because of the cost of training. It also appears that age and education play a major role in the uptake of ICT products. Younger farmers are likely to use these technologies than older farmers. Apart from age, education also plays a major role in the uptake and use of these technologies. As such, only farmers with higher qualifications can easily make use of these technologies.

4.7.9 Headline findings: tourists

Tourists interviewed seemed to be well informed when it comes to technologies that should and are being used in the agritourism industry. However; they mentioned that farmers in rural communities do not have enough funds to cover the costs of modern ICTs in general and this hinders access and use of these technologies. Tourists and farm employees agreed with the farmers on the information farmers need in order to successfully run their businesses and recommended that farmers use some of the ICTs to market their products and services.

4.7.10 Headline findings: government

From the findings on government, it is clear that farmers do not have knowledge of some of the platforms that can be used to access information relevant to agritourism. Some of this information includes funding as well as legislation that govern venturing into agritourism business. There are certain rules and regulations that farmers have to adhere to before gaining access to funds from government. However, farmers do not have knowledge of these because they do not have proper information channels to access relevant information.

In Chapter 5 the findings will be discussed based on the research questions and themes.

CHAPTER FIVE DISCUSSION

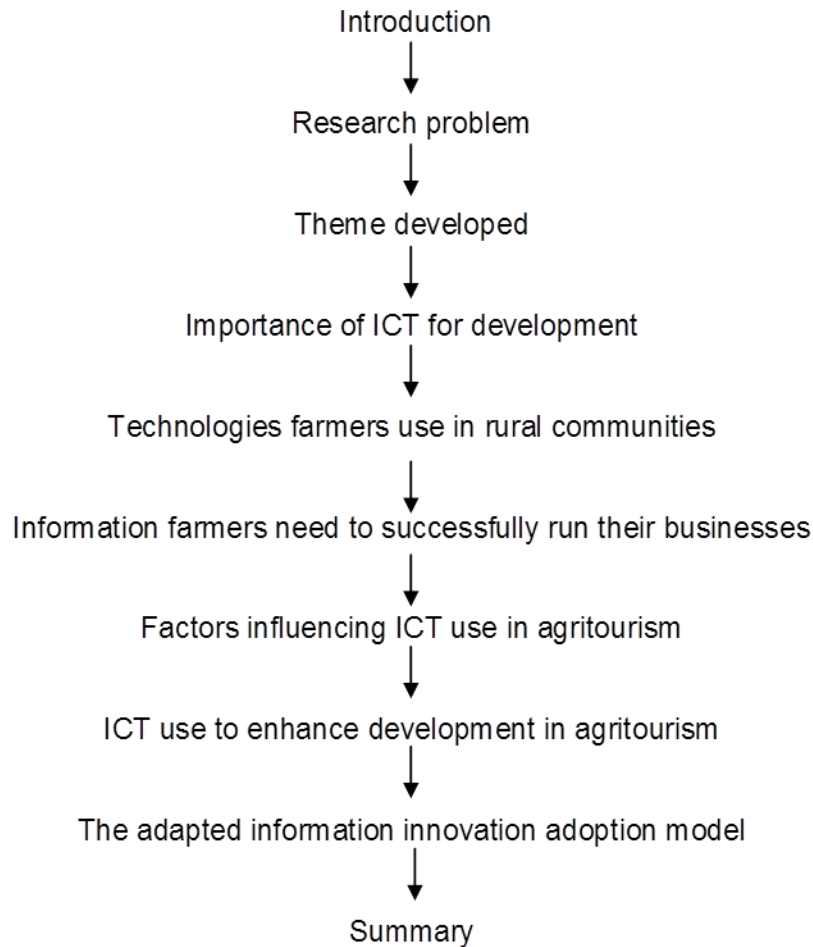


Figure 5.1: Layout of Chapter 5

5.1 Introduction

Chapter 5 presents the discussion of the research findings from analysis of the research results reported in Chapter 4. The study explored how different types of ICT can be used by farmers to enhance development and overcome potential barriers that may inhibit the use of technologies in rural communities of Lesotho. The discussion centres on the findings from the data and literature analysis that answers the problem statement and research questions as described in Chapter 1.

5.1.1 The research problem

Information is the most valuable input in agritourism. Information needs to be accessible, accurate and timely in order to ensure sustainable agricultural practices (Singh, 2012).

Munyua (2000) states that ICTs help diffuse information to local communities and provide access to knowledge needed by farmers and tourists.

The agritourism industry in Lesotho is faced with challenges which consist of accessibility, insufficient adoption, high cost of ICT in general, lack of ICT skills and awareness (Parker, 2009). Frempong (2008) argues that less research has been done in the field of information technology (IT) in Lesotho.

5.1.2 Problem statement

Many farmers do not have access to ICT, resulting in the ICT offerings being difficult to use and thereby creating a challenging environment to develop agritourism as an industry.

5.2 Themes developed

Nine themes were developed from the data analysis and are similar to the themes found in the literature. These are: i) ICT awareness and knowledge ii) ICT access iii) ICT infrastructure iv) ICT usefulness v) Information vi) Training vii) Finance viii) Security and safety ix) Landscape and x) Legislation. The themes are discussed in the following subsection:

5.2.1 ICT awareness and knowledge

Farmers in rural communities of Lesotho use certain technologies for business purposes. Technologies that are commonly used by agritourism farmers include radio, television, landline phones and cellphones. A number of farmers use the internet, computers and fax technologies, while digital cameras and voice recorders are mostly unused technologies. The findings earlier presented indicate that farmers in rural communities of Lesotho are aware of certain technologies that could be used in agritourism. However, they are unable to use some of these technologies fully because of certain barriers inhibiting and preventing them from gaining benefits of ICT. Mapeshoane and Pather (2012) state that the lack of skills and knowledge on how, where, why and when to use technologies is the major barrier that inhibits the potential use of modern technologies. As far as this study goes, it seems that the majority of participants do not have enough skills and knowledge to use ICT on their farms.

5.2.2 ICT access

The cost of ICT in developing countries is generally very high (Tembo, 2008). ICT plays an important role in promoting sustainable development and enhancing the livelihoods of rural farmers. Farmers are experiencing difficulties in getting access to technology-related services. The difficulties include: a lack of poorly developed infrastructure, outstretched landscape, a lack of support service as well as lack of training. These are major challenges to farmers in rural communities. Inability to gain effective and efficient access to ICT makes it difficult for the farmers to gain benefits and to explore opportunities that ICT offers.

5.2.3 ICT infrastructure

Connectivity to mobile devices, poor internet connection and electricity are stumbling blocks in the development and growth of agritourism industry in rural communities of Lesotho (Mokaya & Njuguna, 2012). The result of this study supports that of Mokaya and Njuguna that poor ICT infrastructure affects the access of ICT. Although infrastructure is the main prerequisite to the use of ICT, the majority of farmers in rural communities of Lesotho felt that ICT infrastructure is not well developed. The consequence of the underdeveloped ICT infrastructure and support is the low level of ICT use.

5.2.4 ICT usefulness

Agritourism products and services depend mainly on ICT. The findings of the study reveal that farmers in rural communities of Lesotho perceive ICT as an important tool that can help improve the quality of information, promote agritourism offerings to a wider market through electronic media, build online relationships with potential customers and suppliers as well as share and disseminate information relevant to agritourism of the region. May et al. (2007), report that technologies are important tools that allow access to information at any time. Technologies assist in enhancing participation and knowledge sharing among agritourism stakeholders, empowering rural communities and helping to overcome social and economic exclusion. These technologies also reduce costs that are associated with knowledge sharing.

5.2.5 Information

Different types of resources are being used by agritourism farmers in rural communities to gain access to information relevant to agritourism, including cellphones, radio, televisions, landline phones, faxes and the internet. Farmers are also using traditional methods such as consulting other farmers and experienced stakeholders involved in agritourism as well as their own knowledge as sources of information needed to help successfully run their agritourism farms. These findings are in-line with that of Mtenga et al. (2014) who show that information is very important in agritourism and needed by farmers in order to make day-to-day and long-term decisions as well as find appropriate markets for their products and services. The array of technologies that are available to farmers in agritourism allows them to access information relevant to agritourism at any time.

5.2.6 Training

ICT training and educational background play an important role in agritourism. Most of the farmers in rural communities of Lesotho are ICT illiterate and need training and education to be able to use and gain the benefits and opportunities ICT offers. It is a lack of training of farmers on topics such as ICT, finance and marketing that hinders the development of agritourism in Lesotho. Omar et al. (2012) state that farmers are faced with a number of challenges and lack of training is identified as a major barrier towards ICT use. Owano (1988) highlights the need for education and training courses for farmers because they lack skills and knowledge on how to use ICT.

5.2.7 Finance

Although ICT is regarded as one of the most useful tools to help gain access to and share information, the majority of farmers in rural communities are still experiencing difficulties in getting access to some of these technologies. The lack of financial resources and the high costs of technology in general are the main factors that hinder the use of some potentially useful technologies by farmers in agritourism. Results of the study also support Omar et al. (2012) and show that the use and adoption of technologies by farmers require appropriate financial resources. Funds are usually not easily available to farmers. Omar et al. (2012) report that financial resources are main factors of production and necessary to purchase farm products. However, high cost of technology remains a major constraint for ICT use, especially to rural farmers who do not have enough funds.

5.2.8 Security and privacy

The importance of ICT in providing safety and security in agritourism has been recognised. The use of technologies such as computers and the internet helps farmers do online transactions and online banking safely through the electronic media. Some farmers are sceptical about the value technology offers because it is seen as a possible fraud tool. Franklyn and Tukur (2012) state that when it comes to information technologies, farmers must be able to trust that these technologies will be beneficial in accomplishing their business goals and completing their tasks. Information that farmers obtain through the use of these technologies must be timely, accurate and not tempered with and privacy levels should be maintained. The authors state that some farmers fear using technologies because of security measures, privacy and the fact that it is difficult to use.

5.2.9 Landscape

Location of farms has a negative and positive impact on the use of ICT by farmers. Poor landscape remains a major obstacle to ICT use in most rural communities. Infrastructure and resources that are needed to repair and maintain roads are expensive and farmers cannot afford them. Sachs (2011) states that agricultural businesses located in rural communities are faced with a number of challenges. Access, quality and cost are the main constraint towards ICT use by rural farmers. Farming in Lesotho takes place in rural communities. As Sachs indicates, vast distance and poor road networks isolate rural communities and leave people who live there poorly integrated into their economies. The author adds that lack of access to goods, services, infrastructure and information in agricultural industry can lead to increased household vulnerability to shocks as well as prevent farmers from participating in growth.

5.3 Importance of ICT for development

Nnadi et al. (2012) state that ICT has opened opportunities that could assist farmers to overcome potential barriers related to sharing and exchanging of information, disseminating knowledge and how to sustain and improve their livelihoods. This is supported by the findings of this study. Farmers interviewed indicated that the use of available ICT has helped them communicate their offerings to their potential markets. ICT enables them to search, compare and purchase agritourism products and services through the electronic media. ICT has also assisted farmers to gain access to information relevant to agritourism in order to successfully

run their businesses as well as reduce communication, travel and transaction costs. These findings show that ICT plays an important role in agritourism development.

5.4 Technologies farmers use in rural communities

Sub-research question 1: What type of technologies do farmers use in rural communities?

The findings of this study point to the fact that farmers in rural communities of Lesotho are aware of ICT tools and most of them use some of the basic ICT tools such as cellphones, radio, television, landline phones, computers, fax technologies, the internet, digital cameras and voice recorders for business and private purposes. Farmers use them to obtain information, communicate with suppliers, customers and others stakeholders in the agritourism industry, do online transactions, advertisement and banking.

From the findings, the use of ICT in rural communities of Lesotho is dominated by ICT tools such as radio, television, landline phones and cellphones. This is mainly because these technologies are easily accessible and cheaper mode of storing and accessing information, communication and disseminating knowledge relevant to agritourism. The literature also shows that mobile phones are easily accessible and have significantly lowered communication costs by allowing individuals and businesses to exchange and gain information quickly and cheaply on a diversity of economic, social and political topic (Arker & Mbiti, 2010).

Besides the technologies mentioned in the preceding paragraphs, the findings reveal that the use of technologies such as computers, fax technologies and the internet remain low in rural communities. This is because farmers find it difficult to use the ICT infrastructure due to low supply of electricity, internet connections or internet service providers, which hinders the growth of agritourism in rural communities of Lesotho. Technologies such as digital cameras and voice recorders are mostly unused by farmers in rural communities of Lesotho. This is because they are expensive therefore and high cost is the main factor inhibiting farmers from gaining the benefits and opportunities that technologies offer.

The research findings reveal that majority of farmers interviewed use the same technologies as those mentioned in the literature review. It can be concluded that the use of ICT by farmers in rural communities of Lesotho is dominated by traditional ICTs such as radio and television, while the use of computers and the internet is low, despite their potential. Other

technologies are not being used because of barriers such as lack of financial resources, accessibility, lack of infrastructure and illiteracy.

5.5 Information farmers need to successfully run their businesses

Sub-research question 2: What information do farmers need in rural communities to successfully run their businesses?

Analysed data from all respondents show that information is important in agritourism and access to information has to be accurate and timely as it is mainly required for sustainability of agritourism. The results of the study support those of Ma Corazon et al. (1998) and show that the lack of timely information can prevent good quality decisions in agritourism and may lower the efficiency of production decisions among farmers.

The findings from the interviews show that farmers in rural communities need information regarding best-farming practices, market prices, weather, funding and disease management. These findings support that of Beaudoin, Saad, van Laethem, Mchet, Maucorps and Mary (2005) to the effect that farmers need more information on best practices and these have been encouraged since 1990s under the term “Good Agricultural Practices”. This finding is also supported by that of Maynard and Tian (2004) that show that farmers need information on new technologies.

Information regarding farming practices is viewed as crucial by farmers in agritourism. The findings show that farmers need information on farming methods, harvesting tools and machinery, how to maintain clean soil and quality of water, packaging and storage, proper hygiene especially when they are working with food. This finding is supported by that of Ellis (2004), which shows that majority of rural farmers still rely on traditional practices such as consulting other farmers for information relevant to farming practices and this information is inadequate and hinders the growth of agritourism.

Information on market is viewed as the most important factor that influences the performance of small farms in agritourism. The findings of the research show that farmers require information on market access as well as market prices. This finding is supported by that of Okello et al. (2012), which show that information about market access is an important factor that influences the performance of farms in developing countries. The accessibility of this information is also important for enhancing and diversifying the livelihoods of poor subsistence farmers in local communities.

The findings from data collected from respondents support the literature, which indicate that weather is one of the most important information farmers need in order to make decisions regarding their farming operation (Tembo, 2008). The findings show that information on weather helps farmers plan their planting and harvesting times. Farmers also need reliable sources of information; they no longer rely on weather focus which tells them that it will rain, but it does not. Sometimes, it is dry and farmers are anxious to know if it will rain or not or how long it will take. They are even prepared to pay for this kind of service as long as they benefit from the information.

Interviewees said that ICT can help provide rural farmers with information relevant to agritourism and view information access as an important factor, especially in rural communities where ICT is not easily accessible. This finding supports that of Abdel-Rahman (2005), to the effect that ICT plays an important role in providing rural communities with relevant information that is required for business purposes.

5.6 Factors influencing ICT use in agritourism

Sub-research question 3: What factors influence the use of ICT in agritourism?

From the findings of the study it may be concluded that ICT use has the potential to improve the livelihoods of farmers in rural communities by improving the quality of agritourism business operations such as increasing access to information relevant to agritourism, improving the way farmers communicate with their suppliers, potential customers and other stakeholders in agritourism industry and, possibly, reducing communication and transaction costs.

The findings from respondents show that factors such as age, farm size, education, off-farm work, gender, farming experience, income, attitude and ICT barriers such as high costs, illiteracy, access to ICT, attitude, cultural barriers, lack of training, network connection and poor landscape inhibit the use of ICT by farmers in rural communities. This finding supports that of Tembo (2008), which indicates that these factors influence the use of ICT by farmers. The findings of the study also support that of Alvarez and Nuthall (2006), which is that some of these mentioned factors have direct and indirect relationship relationships and can influence the use of ICT either positively or negatively.

The literature supports the findings in that the level of income is also correlated with the adoption and use of ICT (Bakkabulindi, Secabembe, Shopi & Kiyingi, 2000). Farmers with

less income are often the ones with least access to ICT tools. It is easier for businesses to acquire ICT facilities if the income level is higher. It is, therefore, recommended that government support rural farmers who cannot afford to buy ICT facilities. Other findings show that the level of education can affect adoption and use of ICT. The possession of an ICT qualification is said to be adequate to enhance the use of ICT (Tembo, 2008). Farmers who do not have higher qualifications are less likely to make use of ICT tools to acquire information.

The findings from the study indicate that high the cost of ICT remains a major constraint to ICT use by farmers in rural communities of Lesotho. Most of the interviewees said that they rely on income generated from their farms and do not have off-farm salaries. This makes ICT tools and services expensive for them to acquire. The issue of high cost hinders the use of potentially useful technologies for farmers. This finding is supported by the literature, while that shows that ICT is not affordable in most developing countries, especially in rural communities where farmers do not have enough funds to cover the initial costs of ICT and ongoing expenses of maintenance (Galloway & Mochrie, 2005).

The majority of respondents said that they use ICTs such as radio and television to gain access to information, share and disseminate knowledge relevant to agritourism. The reason for their not using modern ICTs such as computers and the internet relate to lack of knowledge on how to use these technologies. Respondents mentioned that navigating the internet is complicated to someone who does not have any idea about how to operate a computer. This finding is supported by that of Rizk (2006) and Tembo (2008), which shows that lack of ICT skills and knowledge hinders the use of ICT by farmers in rural communities

Attitude towards ICT was cited as a factor that influences the use of ICT in rural communities of Lesotho. Respondents were of the view that farmers are still reluctant when it comes to ICT use, especially for banking purposes. The main issues are safety, security and the cost involved in order to ensure safety. Farmers also complained, about virus attacks, the system being hacked and the ICT costs being too high. These issues reduce the number of farmers using technologies in rural communities. This finding supports that of Palan and Sommai (2011) who show that the issue of safety and security hinders ability for ICT to be use fully.

Poor landscape and network connections were also identified as factors that influence ICT use by farmers in rural communities of Lesotho. Respondents said that farmers make great efforts in order to obtain information relevant to agritourism. However, the findings from the study show that slow and poor network coverage make it difficult for farmers to use ICT tools

for agritourism purposes. This is supported by the literature (Tembo, 2008, Okyere-Asenso, 2012), to the effect that these barriers inhibits the use and deployment of ICT.

The findings of the study also show that technologies have impacted negatively on rural society in the form of increased violence and crime. This supports the findings of Sefika, Mavetera and Mavetera (2012), which show that the contents of television and internet expose the youth to immoral behaviour. The literature also shows that culture and religious beliefs influence ICT use among rural communities.

In order for farmers to overcome these barriers some of the respondents recommend involvement of government and corporates in awareness campaigns as well as training of rural communities, especially the older farmers, who do not have knowledge and skills in how to use ICTs.

5.7 ICT use to enhance development in agritourism

Sub-research question 4: How can ICT be used to enhance development in agritourism?

ICT tools enable farmers to have access to information, share and disseminate knowledge to agritourism stakeholders through the use of electronic media. High penetration and affordability of ICT services have brought more opportunities for farmers to leverage these technologies to start and grow their own operations. However, there are certain barriers that may inhibit the use of these technologies by farmers, especially in rural communities. Tembo (2008) states that despite efforts to apply ICT in developing countries, the majority of farmers do not have access to ICT. In order to minimise some of the challenges, the findings from the interviews show that ICT should be used to reduce production, communication as well as transportation costs. This finding supports that of Parker (2009), which shows that ICTs have been proven to lower the costs and allow businesses to compete globally.

The findings from the interviews show that the use of technologies by rural farmers should be able to improve the quality of their products and services. This finding supports Parker (2009), which shows that technology-enabled services are able to improve the capacity and livelihoods of farmers. Technologies such as mobile cellphones and the internet have significantly reduced communication, production, travelling costs and provided new opportunities for farmers to easily access and share information relevant to agritourism through email and short messages.

Respondents said that rural farmers need platforms that will provide them with easy access to accurate information relevant to agritourism and allow them to promote their products and services as well as communicate with suppliers and potential customers in a cheaper way. This finding supports Havlicek et al. (2011), which shows that farmers should be provided with an electronic platform where they can upload and present information about their farms in a cost effective manner.

5.8 A framework for the use of ICT to enhance agritourism in Lesotho

A framework for the use of ICT to enhance agritourism in Lesotho is proposed for this study. This framework is adapted from the Information Innovation Adoption Model by Alvarez and Nuthall (2006). Three variables that could have an influence on the use of ICT in agritourism are introduced. These variables are of farm employees, government and tourists, because they play an important role in the use of ICT in agritourism as well as the shape government policies on agritourism development.

The proposed model in Chapter two was used in this study in the rural communities of Maseru district, in Lesotho. Based on the variables and factors that are considered significant, an extension model was developed and the results on the use of ICT by agritourism farmers from the study are explained in Figure 5.2.

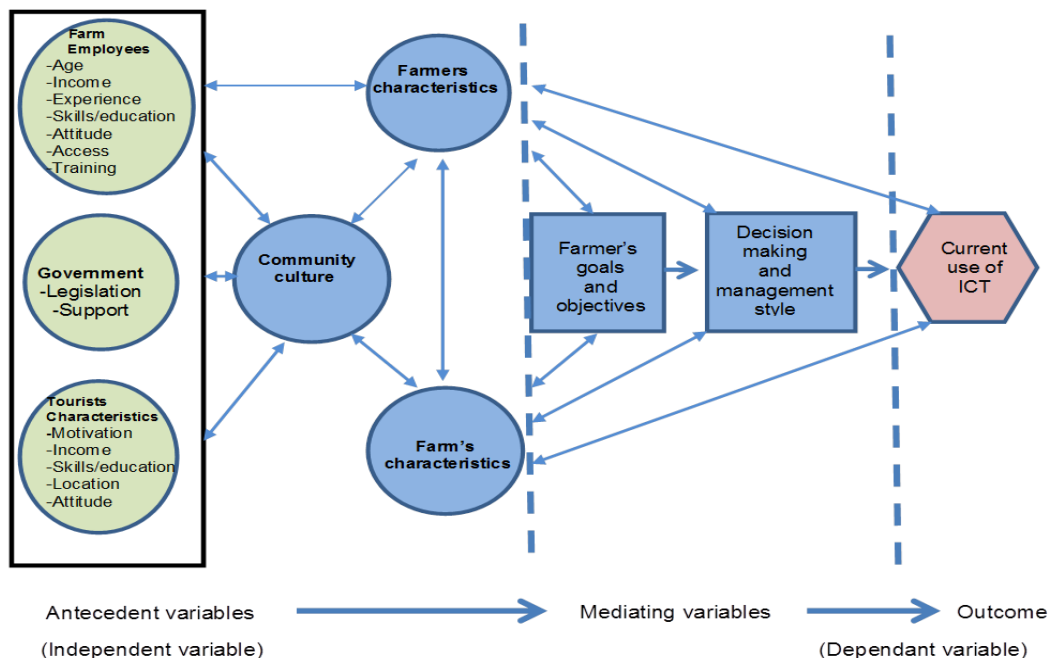


Figure 5.2: Model for ICT use in a developing context

Source: Alvarez and Nuthall (2006:51)

Groups of variables were investigated in order to answer the questions pertaining to the problem under investigation. The adapted framework introduced three variables, which were: the farm employees, government and tourists. The findings from the framework on the use of ICT to enhance development in agritourism were in line with that of Alvarez and Nuthall (2006), which show that factors such as age, income, experience, skills/education, attitude/motivation, access, training, legislation and location affect the use of ICT. Mediating variables such as decision-making and information management style were not tested as this is beyond the scope of the research.

5.9 Summary

The overall results of this study demonstrate that farmers in rural communities view ICT use for business purposes as an important component of agritourism development. However, the findings also show that there are certain barriers that inhibit the use and availability of these technologies in order to increase access to information and connect rural communities with the global network. Among these barriers, high costs of technologies in general and on-going expenses of maintenance were identified as major factors inhibiting the use of ICT. Another factor mentioned by most of the respondents was a lack of good infrastructure such as network connection. Farmers are also unable to communicate their products and services to the market because of poor connection. Poor landscape also restricts transportation of ICT infrastructure to rural communities.

Technologies such as radio and television provide inadequate information. However, majority of farmers in rural communities still view and rely on these technologies as the main source of information. From the findings, it can also be concluded that farmers in rural communities are aware of specific technologies that are being used for business purposes. However, barriers such as high costs of technology and maintenance, age, income, experience, ICT skills, education, attitude towards use, access to ICT, lack of training, government legislation and support hinder the use of new technology and decrease the number of farmers who are able to use these technologies for business purposes.

CHAPTER SIX

RECOMMENDATION AND CONCLUSIONS

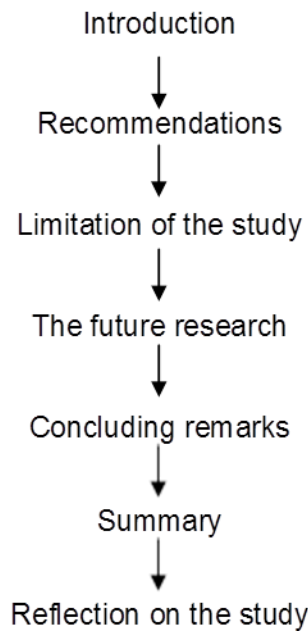


Figure 6.1: Layout of Chapter 6

6.1 Introduction

Chapter 6 present the summary of the study as well as the highlights of the main research findings, recommendations and conclusions drawn from the study. The study addresses the main uses and challenges of ICT by agritourism farmers in rural communities of Lesotho in order to enhance development. The research also aims to contribute towards agritourism development and related studies as well as propose possible guidelines to overcome potential barriers that may inhibit the use of these technologies by farmers in rural communities.

ICT can play a major role in promoting sustainable development and enhance the livelihoods of farmers in agritourism. The use of ICT in rural communities of Lesotho remains low and dominated by traditional technologies such as radio and television. Modern technologies such as computers, the internet and cellphones in storing and sharing information as well as disseminating knowledge in rural communities of Lesotho remain largely untapped, despite their potential.

From experiences of other farmers on the use of modern ICT for agritourism, these technologies can benefit the farmers by generating development and improving productivity,

reducing costs, gaining access to potential markets, increasing sales and profits. However, farmers in rural communities do not have access to ICT infrastructure, which slows down and inhibits the use of ICT services to rural communities.

6.2 Recommendations

6.2.1 Provision of infrastructure

The findings of the study show that the use of ICT to enhance development in the rural communities of Lesotho is at a very low level. Factors such as a lack of access to ICT, poor ICT infrastructure, high costs of technologies and maintenance, limited knowledge and inadequate skills, accessibility, security and privacy were identified as accounting for the low use of modern technologies by agritourism farmers in rural communities of Lesotho. Although there are certain challenges inhibiting the use of ICT for development, farmers in rural communities of Lesotho believe that if they are to be offered training, better ICT infrastructure, better access to the ICT infrastructure, affordable ICT tools and awareness campaigns for agritourism, they will benefit from the opportunities that ICT can offer.

6.2.2 Development of strategies addressing ICT challenges

The future of agritourism depends largely on ICT. An understanding of how the different types of technologies can contribute towards rural development and how they can assist to overcome barriers inhibiting the use of ICT in rural communities, are prioritised in this study. Although some rural farmers show an interest in using modern technologies for business purposes, the majority of respondents do not have access to ICT tools and experience difficulties accessing technology-related services. As a result, they do not consider ICT as an option for them. This is a major challenge for the agritourism industry and all role players in the industry will have to work together to develop an agritourism strategy that addresses these challenges in order to enable the farmers adopt technologies available and to transform the industry.

6.2.3 Investment in ICT infrastructure

Poor ICT infrastructure and high costs make it difficult for individuals and businesses in the private sector to invest in technology-related services in rural communities of Lesotho. ICT is significantly limited and insufficient for disseminating knowledge and sharing information through the ICT industry. Although farmers view ICT as important for agritourism, the lack of

infrastructure remains a stumbling block in the development of agritourism. To overcome this problem, it is further recommended that policy-makers and government departments involved in the agritourism industry invest in infrastructure such as electricity, internet access points, proper roads, network signals as well as low cost or affordable ICT tools, which were mentioned as the main constraints towards ICT use in rural communities. Television and radio, although seen as “old technology”, are regarded as an effective method of information sharing. Consequently, it is therefore important to strengthen and optimise the delivery of knowledge and information through television and radio programmes.

6.2.3 ICT training and awareness campaigns

Lack of skills and continuous access to information by farmers, employee, suppliers and other people living in rural communities remains one of the main requirements for rural development. Some farmers in rural communities of Lesotho still do not know how, when and where to use these technologies in the different areas of agritourism. In order to overcome this barrier, ICT training and awareness campaigns are required for various communities, especially local schools, the unemployed as well as private and public organisations. Training is the one of the most important factors that will ensure that all agritourism farmers are ready to make use of these technologies in order to promote sustainable development and enhance their livelihood. Rural communities need to be educated on the importance of ICTs for development and how they can be used for business purposes. Training should be freely available and at no cost.

Respondents recommended training on the use of modern ICT tools for farmers. Government and policy makers should be involved by initiating training programmes through the Minister of Communications, Science and Technology in order to develop the capability of agritourism farmers in ICT tools. This is because the majority of farmers in rural communities rely on agritourism as their main source of income. An increase in income will contribute towards the nation’s GDP. ICT training for rural communities should be offered for free as well.

Farmers in rural communities should be encouraged to start saving and investing in modern technologies that will assist them in improving their businesses. These investments could help increase their sales and profits, and assist them gain access and be competitive in the global market.

It is recommended that not only policy-makers and the government of Lesotho, but everyone is involved in agritourism, assist in addressing the problem of ICT for development in the

agritourism sector and evaluate appropriateness of the proposed framework for the use of ICT to enhance agritourism in Lesotho. This framework is adapted from the information innovation model by Alvarez and Nuthall (2006). It is also recommended that the framework be evaluated and tested for deployment in Lesotho.

6.3 Limitation of study

The major limitation of this study is the fact that it was conducted in rural communities of Maseru, Lesotho. The study also adopted a multiple-case study where agritourism farms that are involved in commercial farming were judgementally selected. The number of respondents interviewed was 23 which is a small sample. Consequently, the results cannot be generalised or seen as a representative of the entire agritourism industry in Lesotho. The sample for the study was limited because of the location of farms, costs, time and willingness of farmers to participate in the study.

6.4 Future research

As discussed earlier, the sample for the research was small. Only 23 respondents were interviewed. There is a need for a larger sample for future research in order to determine the model that could be used by the farmers, farm employees and tourists. The study also focused on farms located in rural communities in Maseru districts. For future studies, a wider investigation exploring other districts in Lesotho needs to be conducted in order to reach a general conclusion. Government policies also need to be revisited. It is recommended that policy-makers and the private sector support farmers with regard to providing training, more sustainable awareness campaigns and affordable ICT tools in order for them to acquire and use these technologies in their farming businesses. It is further recommended that the proposed guidelines be tested in a larger research project as to its validity and especially usefulness in agritourism in Lesotho.

6.5 Concluding remarks

The study identified how the different types of technologies available for agritourism farmers in rural communities of Lesotho can be used to enhance development in different areas of agritourism project. It also identified barriers that inhibit the use of these technologies by farmers. Although certain technologies exist, the majority of farmers do not use them because of barriers identified in the study that do not allow farmers to use available ICT products and services.

The findings of the study show that the majority of interviewees (farmers, farm employees, tourists and government officials) are using certain technologies on a daily basis. From the adapted framework, factors such as ICT access, location, attitude and support affect majority of respondents with regard to ICT use, but these factors affect respondents differently. The government of Lesotho should take into consideration all factors that could influence the use of ICT by farmers in rural communities when planning to support agritourism.

Participants in the study recommended that the government of Lesotho, together with local and private sector in agritourism, be more involved in creating awareness of the benefits that ICT can offer the agritourism sector. It is recommended that training and affordable ICT tools be made available to farmers. The role of government, local and private sector needs to be evaluated in terms of ICT costs as well as developing other solutions for rural farmers in the agritourism sector. Respondents also recommended that training and awareness campaign should be sustainable.

6.6 Objectives of the study

6.6.1 To identify the types of ICT farmers are using in rural communities

The first objective of the study was to identify the types of ICT farmers are using in rural communities. The findings of the study show that farmers in rural communities of Lesotho use certain types of technologies for business purposes. These include: of cellphones, radio, television, landline phones, computers, the internet, digital cameras, fax technology and voice recorders. Technologies that are commonly used by agritourism farmers are radio, television, landline phones and cellphones. A small number of farmers use the internet, computers and fax technologies, while digital cameras and voice recorders are mostly unused technologies in rural communities of Lesotho.

6.6.2 To determine different types of information needed to successfully run an agritourism farm

The second objective of the study was to determine different types of information needed to successfully run an agritourism farm. Singh (2012) states that information is important in agritourism and access to it has to be accurate and timely as it is mainly required for sustainability of agritourism. The findings of the study show that farmers in rural communities of Lesotho need information on best practices for agritourism, market access local as well as

international), weather, financial information, accommodation, transport, attractions and new technologies to successfully run their agritourism enterprises.

6.7.3 To identify barriers that inhibits the use of ICT in agritourism

The third objective of the study was to identify barriers that inhibit the use of ICT in agritourism. The findings of the study show that barriers that may inhibit the use of ICT by agritourism farmers in rural communities of Lesotho are: lack of training, limited ICT skills, high costs of ICT in general, age of the farmer, changes in weather conditions, ICT access, the farmer's attitude towards ICT use, the size of the farm, poor telecommunication and network infrastructure.

6.7.4 Proposed guidelines for farmers to use ICT in order to enhance agritourism development

The last objective of the study was to propose guidelines for farmers to use ICT in order to enhance agritourism development.

The proposed guidelines are:

- Identify technologies that are being used in the agritourism industry.
- Explore which of these technologies are available for farmers in rural communities.
- Determine barriers that inhibit access and use of these technologies.
- Determine the cost of technologies in general (purchase, maintenance).
- Identify sources of funding for acquisition of technologies.
- Establish relationship with government, IT specialists and other stakeholders involved in agritourism.
- Determine the cost of information access through the use of technologies.
- Determine the cost of training for ICT use.
- Identify awareness programmes that specialise in technology use in businesses.
- Ensure that infrastructure needed for ICT use is available in the area.
- Enhance ICT use in rural communities as a priority for sustainable development.

6.7 Summary

6.7.1 Problem statement

Many farmers do not have access to ICT, resulting in the ICT offerings being difficult to use and thereby creating a challenging environment to develop agritourism as an industry.

6.7.2 Research question

How can ICT be used to assist farmers with agritourism development?

Agritourism farmers in rural communities of Maseru in Lesotho can use available technologies to access information on best practices, market access, weather, financial information, accommodation, transport, attractions and new technologies. This information is relevant and can help agritourism farmers to successfully run their farming businesses. Agritourism farmers can also use ICT as a marketing tool to help market their offerings to a broader online market, compete at an international level and increase their sales and profits.

Farmers can use ICT to reduce production, communication and travelling costs. With the use of the internet, they can also do online transactions such as banking, e-Commerce and store their important data in an organised and secure manner. Since most of the farmers in rural communities of Lesotho lack knowledge on how to use some of the ICT tools, respondents recommended that policy-makers include training on the available ICT for farmers. It is also important that role players communicate to rural communities how their involvement in agritourism could benefit and enhance rural development.

6.7.3 Aim of the study

The aim of this research was to explore how ICT could be used by farmers in rural communities. The research also aimed to contribute towards agritourism development and related studies and to propose possible guidelines to overcome potential barriers that may inhibit the use of these technologies by farmers in rural communities.

6.8 Reflection on the study

The motivation for this study stemmed from my educational background in the field of Tourism Management and my passion to see that Lesotho become a recognised agritourism destination due to its naturally-endowed environment, which still needs to be nurtured and developed into a vibrant agritourism sector. As in any industry, the emergence of ICT has played an important part in promoting sustainable development in the agritourism sector. With the growing demand for agritourism products and services, ICT opens new opportunities that could help farmers to overcome potential barriers affecting sharing, exchanging, disseminating knowledge and how to sustain and improve their livelihoods.

Despite the importance of technologies for agritourism development and production, farmers in rural communities of Lesotho are faced with challenges that affect their ability to obtain income from agritourism. I decided to explore the potential use of ICT to enhance agritourism in Lesotho. Thus, the aim of the research was to explore how ICT could be used by farmers in rural communities. The research also aimed to contribute towards agritourism development and related studies as well as propose possible guidelines to overcome potential barriers that may inhibit the use of these technologies by farmers in rural communities.

Different methods were used in this study in order to investigate the problem. Multiple-case studies were deployed as a research strategy where commercial farms were judgmentally selected in the rural communities of Lesotho. It was difficult for me to find the farms that were involved in agritourism activities, but with the help of friends and other farmers in Lesotho the farms were identified. I also encountered difficulties in reaching some of the farms because they are situated in remote areas which are difficult to reach by public transport. I had to pay a private individual for assistance with regard to transport to visit the farms.

I collected primary data using semi-structured interviews with respondents who included farmers, farm employees and tourists available on the farm during the interview process and government officials from the Ministry of Tourism, Environment and Culture. The interviews were scheduled three weeks in advance, but because of the busy schedule of the farmers and employees some interviews were interrupted during the sessions. Sometimes a phone rang or clients entered the office during interview and the sessions had to be put on hold until we were able to resume. Most of the interviewees had difficulty in expressing themselves in English so it was decided to use Sesotho as a medium, since it was their first

language. This may have led to misinterpretation of some of the statements made by interviewees as I had to not only transcribe the interviews, but translate it at the same. As interviewees were not fluent in English and in some cases cannot read English, I did not validate what they said by asking them to read the transcripts for correctness.

I used a number of documents, including books, journal articles, published thesis/dissertations, government reports and the Internet as sources of secondary data. Information collected from these sources was put together in order to compile a literature review. Data collected from interviews were analysed using content analysis whereby data were coded by looking for specific words and meanings that were relevant to the topic for which themes could be identified in the text provided for analysis. I used manual qualitative data analysis to transcribe the interviews.

I adapted a framework of Information Innovation Model to explore the potential use of ICT in order to enhance agritourism in Lesotho. From the adapted framework, I included farm employees, individual tourists and government officials. I looked at factors that have a relationship with the problem under investigation. The findings show that while ICT has the potential to enhance agritourism development, issues such as the high cost of ICT, accessibility, lack of infrastructure, lack of ICT skills, training, awareness and education are some of the barriers that inhibit the use of ICT by rural farmers. I made some recommendations and proposed guidelines on how ICT should be used to enhance development.

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APPENDICES

APPENDIX A: INTERVIEW CONSENT FORM



Cape Peninsula
University of Technology

FID/REC/ICv0.1

FACULTY OF INFORMATICS AND DESIGN

Individual Consent for Research Participation

Title of the study: The potential use of information communication technology to enhance agritourism in Lesotho

Name of researcher: Konosoang Cecilia Mpiti
Contact details: email: cmpiti@yahoo.com phone: 079 402 5602

Name of supervisor: Dr. Andre de la Harpe
Contact details: email: andre@i2ifica.com phone: 082 448 1058

Purpose of the Study: To explore how ICT can be used by farmers in rural communities with the aim of contributing towards agritourism development and related studies as well as how to overcome potential barriers that may inhibit the use of these technologies by farmers in rural communities.

Participation: My participation will consist essentially of small farmers, farm employees and tourists

Confidentiality: I have received assurance from the researcher that the information I will share will remain strictly confidential unless noted below. I understand that the contents will be used only for M Tech thesis and that my confidentiality will be protected by using codes instead of the business names.

Anonymity will be protected in the following manner (unless noted below) the identities and other personal information of the participants will not be disclosed, and no information collected will be accessible beyond the immediate researchers involved.

Conservation of data: The data collected will be kept in a secure manner. The research is going to use her recording device which I believe she will make sure that data is kept safe all the time and no one have access to it except her supervisor on request.

Voluntary Participation: I am under no obligation to participate and if I choose to participate, I can withdraw from the study at any time and/or refuse to answer any questions, without suffering any negative consequences. If I choose to withdraw, all data gathered until the time of withdrawal will destroyed.

Additional consent: I make the following stipulations (please tick as appropriate):

	In thesis	In research publications	Both	Neither
My image may be used:	No	No	N/A	N/A
My name may be used:	No	No	N/A	N/A
My exact words may be used:	Yes	Yes	N/A	N/A
Any other (stipulate):	N/A	N/A	N/A	N/A

Acceptance:

I, (print name) _____

agree to participate in the above research study conducted by Miss Konosoang Mpiti of the Faculty of Business in (Informatics and Design) Department of Accounting (Information Technology) at the Cape Peninsula University of Technology, which research is under the supervision of Dr. Andre de la Harpe.

If I have any questions about the study, I may contact the researcher or the supervisor. If I have any questions regarding the ethical conduct of this study, I may contact the secretary of the Faculty Research Ethics Committee at 021 469 1012, or email naidoove@cput.ac.za.

Participant's signature: _____ Date: _____

Researcher's signature: _____ Date: _____

APPENDIX B: QUESTIONNAIRE FOR INTERVIEWS WITH THE FARMERS

This questionnaire aims to investigate how the use of ICT can assist farmers with agritourism developments in rural communities of Lesotho with the aim of contributing towards agritourism development and related studies as well as how to overcome potential barriers that may inhibit the use of these technologies by farmers in rural communities.

1. How can ICT be used to assist farmers with agritourism developments?

1.1 What technologies do farmers in rural communities use?

1.1.1 What different types of ICT do you use in your farm?

1.1.2 How long have you been using these technologies?

1.1.3 What technologies do you use most?

1.1.4 How do you use these technologies in your farm?

1.2 What information do farmers need in order to successfully run their farms?

1.2.1 What type of information do you need in order to successfully run your farms?

1.2.2 How important is this information?

1.2.3 What kind of technology is reliable to provide this information?

1.3 What are the factors that influence the use of ICT in agritourism?

1.3.1 What are the barriers inhibiting the use of ICT in agritourism?

1.3.2 What are the positive impacts of using ICT in agritourism?

1.3.3 What are the negative impacts of using ICT in agritourism?

1.3.4 What are the challenges faced by farmers in using ICT in their farms?

1.4 How can ICT be used to enhance agritourism development in rural communities?

1.4.1 How do farmers communicate with employees and other stakeholders?

1.4.2 How do you access agritourism information?

1.4.3 How can ICT be made available for farmers in rural communities?

1.4.4 How can ICT be used to assist with agritourism development?

APPENDIX C: QUESTIONNAIRE FOR INTERVIEWS WITH THE FARM EMPLOYEES, TOURISTS AND GOVERNMENT OFFICIALS

This questionnaire aims to investigate how the use of ICT can assist farmers with agritourism developments in rural communities of Lesotho with the aim of contributing towards agritourism development and related studies as well as how to overcome potential barriers that may inhibit the use of these technologies by farmers in rural communities.

- 1.1 What technologies do farmers in rural communities use?
- 1.2 What information do farmers need in order to successfully run their farms?
- 1.3 What are the factors that influence the use of ICT in agritourism?
- 1.4 How can ICT be used to implement agritourism developments in rural communities?

APPENDIX D: FARMERS INTERVIEW RESPONSES

Interview questions	Respondent 1	Respondent 2	Respondent 3	Respondent 4	Respondent 5	Respondent 6
1.1 What technologies do farmers in rural communities use?						
1.1.1 What are the different types of ICT do you use in your farm?	Cellphone Television Radio Landline- phone Computer	Cellphone Television Radio Landline- phone Computer Internet Fax	Cellphone Television Radio Landline- phone Computer Internet	Cellphone Television Radio Landline- phone Digital- camera	Cellphone Television Radio Landline- phone Fax	Cellphone Television Radio Landline- phone Voice- recorder
1.1.2 How long have you been using these ICT?	8 years	12 years	6 years	4 years	10 years	6 years
1.1.3 What ICT do you use most?	Cellphone Television Radio	Cellphone Television Radio, Landline phone	Radio Internet Cellphone, Landline phone	Cellphone Pamphlets Signboard	Cellphone Television Radio	Radio Cellphone Voice recorder
1.1.4 How do you use these ICT in your farm?	To get access to information relevant to agritourism	Negotiate prices with suppliers and customers; To search, compare and make decisions	To get access to information quickly To save costs, compare prices and compete with other farmers	To communicate with suppliers and customers and improve the quality of our offerings	To get access to information quickly; Communicate with suppliers and customers	To share information To get access to information relevant to our products

1.2 What information do farmers need in order to successfully run their farms?

<p>1.2.1 What type of information do you need in order to successfully run your farm?</p>	<p>We need Information on how to market our businesses, safety and security measures and equipment needed for establishments. We also need information on accommodation so that our visitors don't struggle</p>	<p>We need information or advice on how to start and sustain agritourism operation, information on the types of accommodation, tourist attractions and transport will also be significant.</p>	<p>I need information on the types of accommodation our customers prefer. And the type of attractions that I will take the tourists visiting my farm to and new technologies that are available for farmers to use.</p>	<p>cash flow from my farming operation is the only primary source of funding I have; therefore I need Information on other sources of finance as well as technologies that will help me get access to this information quickly</p>	<p>We need information on the different types of transport services available for tourists to use, including our suppliers</p>	<p>We need Information on weather. Tourism events are seasonal and need to have the correct information on weather before organising these events.</p>
<p>1.2.2 How important is this information ?</p>	<p>We have to make sure that our products are known to potential customers. We also need to make sure that they are safe when they visit our farm.</p>	<p>A good business plan advice can help us set up strategic objectives that are needed for our business and help identify challenges related to</p>	<p>To be able to satisfy customer's needs. Learn how to process work automatically, safe time and money. It will help in managing and preserving</p>	<p>It help us apply for credit loans from the banks, purchase material as well as to track their financial information</p>	<p>This type of information is important because we need to make sure that they get the mode transport that is comfortable with.</p>	<p>This information is vital for because we organise events for tourists and some of these activities do not need to be scheduled during rainy season</p>

		business operations	attractions			
1.2.3 What kind of technology is reliable to provide this information ?	We use cellphones, landlines and sometimes television to get access to these best practices.	This type of information is normally found on the internet, from other farmers through the use of cellphones	Internet is reliable for provision of this type of information, however our connection and coverage is slow and inhibit the process	We use internet to get this type of information. However we still prefer to make use of radio to get access to information	Internet is the best technology to provide us with this information. Customers can even search, compare and book on their own.	I get Information from field gatherings and others farmers through the use of cellphones and landline.

1.3 What are the factors that influence the use of ICT in agritourism?

1.3.1 What are the barriers inhibiting the use of ICT in agritourism ?	there is no electricity in some parts of the country, which is a pre-requisite for ICT use and this makes it difficult for farmers to make use of ICT infrastructure in their communities	I think it is a waste of money for me to buy modern technology that I am not going to use because most of our farming activities involve field work not office	Our communities are sparsely populated and most of our farms are located in areas that are far from main road, this makes it difficult for us to get access to ICT due to poor network coverage	Our farming business is still growing and we don't have enough funds to cover the cost of acquiring modern technologies maybe in near future not now	They are difficult to use, i don't know how to search for information using internet. I have trust issues	We are struggling to get cellphone reception, internet connection is also slow in other areas and expensive too
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1.3.2 What are the positive impacts of ICT in agritourism ?	ICT helps in saving travelling and communication costs	I think ICT can help us reach a wide range of market through the use of internet	These technologies help in disseminating knowledge and sharing of information across the agritourism sector	Technologies such as digital cameras presents offerings in an organized and understandable manner, they also help improve the quality of information	ICT can help increase sales and possibly generate profits if adopted and used properly by farmers in agritourism sector	Increases accessibility to information needed to successfully run the agritourism farms
1.3.3 What are the negative impacts of ICT in agritourism ?	It is expensive to use and high cost of maintenance and running costs affect usage of these technologies	We are unable to market our products on an electronic media and instructions are written in language that we do not understand	Some of these technologies provide us with limited information regarding our products and services	Technologies are the main drivers behind increased violence and crime in our community and people use smartphones in crime related activities.	There is poor network coverage in rural communities and ICT infrastructures needed to solve this problem is not easily accessible and therefore farmers do not benefit	At the moment we don't see the need because most of our jobs include field work so technology will add more cost
1.3.4 What are the challenges faced by farmers in	Unable to increase our sales and profits	Education is the main challenge inhibiting the use,	Poor ICT infrastructure makes it difficult for us to get	Attitude and lack of awareness on the importance	Farmers need training in order to make use	The main challenge that we're experiencing at the

using ICT in their farms?		only farmers with higher post graduate diploma are likely to make use of ICT	access to correct information relevant to agritourism products and services	of ICT hinders the adoption and ICT usage in rural communities	of these technologies however, they are unable to because training is expensive and some of them cannot even afford to take their staff to training courses	most is how to get access to these technologies
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1.4 How can ICT be utilized to implement agritourism developments in rural communities?

1.4.1 How do you communicate with your employees?	We use cellphones most of the time	I communicate with my employees through emails, cellphones and landline	We communicate face to face, when they are not at work through cellphones, I sometimes send fax and email	I love using cellphone, its quick and reliable	I do use fax, cellphones, landline	I use cellphone most of the time, landline when I'm in the office or face to face
1.4.2 How can farmers be assisted with regards to ICT use and adoption in agritourism ?	I think farmers who do not have ICT skills can be offered training on how these technologies are used.	The government should donate some of these technologies to the rural communities	Modern technologies are expensive compared to the ones that are available in our farms therefore we should	Awareness campaigns and free training has to be offered to farmers and rural communities with regards to	Government and other private companies should be involved in providing farmers and rural communities with	Encourage farmers to invest on modern technologies through awareness campaigns

			be provided with affordable ICT in order for us	ICT use	proper ICT infrastructure such as electricity	
1.4.3 What efforts do you make for stakeholders get access to information related to your offerings?	My customers get information through printed media, word of mouth and making phone calls	They get information through the radio and newspapers	I have a database of all suppliers and customers, I email them information every now and then	They use their cellphones most of the time and other get information through other customers	We advertise our products through television and radio and that's where people get information about our products from.	I have sign boards, they also get information through the radio, newspapers and word of mouth
1.4.4 How can you use technology to enhance development?	I have internet connection. the use of internet lowers the cost of searching for offerings through the electronic media	I think the use of internet banking can help us check our financial statements without leaving our offices	Agritourism farmers who have access to the internet can use this media as a platform to advertise their products and services to a broader market and this will possibly increase their sales and profits	These technologies can help us search, compare as well as book offerings through electronic media. We can also do online banking and this will help in reducing travelling and avoid wasting time	Technologies that we have can be used for sharing and exchanging information to different stakeholders that are involved in agritourism and disseminate knowledge that is needed for the successful running of the farm	Instead of wasting money travelling to different places in order to get access to information, we can use these technologies to send messages in an affordable manner by using cellphones and online messages

APPENDIX E: FARM EMPLOYEES' INTERVIEW RESPONSES

Respondent 7	Respondent 8	Respondent 9	Respondent 10	Respondent 11	Respondent 12	Respondent 13	Respondent 14
1.1 What technologies do farmers in rural communities use?							
Cellphone Television Radio Landline- phone	Cellphone Television Radio Landline- phone Computer	Cellphone Television Radio Landline- phone Computer Internet Fax	Cellphone Television Radio Landline- phone	Cellphone Television Radio Landline- phone Computer Internet Fax	Cellphone Television Radio Landline- phone	Cellphone Television Radio Landline- phone	Cellphone Television Radio Landline- phone
1.2 What information do farmers need in order to successfully run their agritourism farms?							
this type of informatio n helps the farmers to be able to satisfy the needs of the potential customer s	We need to know what our customer s need first, informatio n on accommo dation, transport services and food is important to us and the farmers	Farmers are faced with a number of threats from climatic variances which include heavy rainfall and drought, therefore need more informatio n on weather	We need more informatio n on the types of technologi es available for use in agritouris m industry	We need informatio n on the type of food we have to produce for our visitors	I think farmers need informatio n on the types of attraction s that they will take their tourists to when they visits our farms	Informatio n on how to start an agritouris m farm is vital to farmers and will help them run it successfu lly	Our aim is to provide food, so we need to know what to offer to our potential customer s

1.3 What are the factors that influence the use of ICT in agritourism?

Some of us are not being offered formal training on how to use ICT, without training it is difficult for us to use and adopt these technologies	ICT is expensive, most of the people who are able to make use of these technologies are the ones with off farm income	I still don't see the need to use some of these technologies, they are slowly replacing the human factor and I prefer to negotiate with suppliers and buyers face to face other using technology. It speeds up decision making process because I am able to get response at the same time	Majority of farm employees are responsible for field work and do not have knowledge on how to operate these technologies	Farmers are unable to use some of these ICT in their agritourism businesses because of poor network coverage and availability of infrastructure that assist in deployment of these technologies	The poor landscape and network infrastructure are the main problem that hinders ICT use in rural communities	Some farmers are unable to get access to ICT tools because they are expensive and acquire as well as to maintain	technologies such as internet, cellphones and television promote theft and violence in our community and "sometimes" the content exposes the youth to immoral stuff
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1.4 How can ICT be used to enhance agritourism development in rural communities?

I think some of these technologies especially the internet can be used as platform for agritourism farmers to market their products	The majority of farmers do not know how to use modern technologies therefore need training and support on these technologies so that they can use them to enhance development	Farmers can compete at an international level through the use of these technologies and this will help them increase their sales and possibly profits	Technologies such as cellphones, faxes and internet should be able to reduce high transaction, communication and travelling costs; farmers can also use electronic to promote products and services and do online banking to enhance development	the availability of broadband and faster internet connectivity can help farmers to deliver critical information on agritourism to broader online market on time	They make communication easier because we no longer have to travel to certain places in order negotiate deal.	Farmers who have access to ICT must be able to use it to get access to accurate information relevant to agritourism and be able to deliver critical information to suppliers, customers and other stakeholders in agritourism industry	ICT should be able to enhance efficiency and help farmers build online relationships with their potential consumers, suppliers and assist in increasing their sales and profits
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APPENDIX F: TOURIST'S INTERVIEW RESPONSE

Respondent 15	Respondent 16	Respondent 17	Respondent 18	Respondent 19	Respondent 20
1.1 What technologies do farmers in rural communities use?					
Cellphone Television Radio Landline- phone Computer	Cellphone Television Radio Landline- phone Computer Internet	Cellphone Television Radio Landline- phone Computer Internet	Cellphone Television Radio Landline- phone Digital-camera	Cellphone Television Radio Landline- phone fax	Cellphone Television Radio Landline- phone internet
1.2 What information do farmers need in order to successfully run their farms?					
I think information regarding accommodation and food is important because people want to know where they will be sleeping when they visit a certain destination	Before making travel arrangements, we want to see what we are purchasing. farmers have to provide us with information regarding their offerings	information on accommodation is also important because we need to know where we will be sleeping while visiting the farms	We need to eat while we are travelling, so I guess farmers need to do research on the type of food their visitors would prefer	Our visit to the farm need to be memorable, farmers need more information on the activities that they would want to offer to their visitors during their stay	Certain events need to be organized during certain times of the year, it is important for farmers to be up to date with weather conditions and seasons

1.3 What are the factors that influence the use of ICT in agritourism?

Although several technologies are available, some farmers do not know how to use them, technologies such as computers and internet require training	Some farmers do not see the need to adopt as well as use ICT in their farms because most of their work involve field not office work	Navigating the internet can be complicated to someone who does not know how to operate a computer. Most of the farmers do not have skills required and therefore need training	ICT equipment such as computers needs electricity to run. Some farmers do not have access to electricity and this inhibit the use of ICT and farmers do not get benefits that ICT can offer	The farms are located far from towns or development areas which makes it difficult for transportation or even connection of some of infrastructures needed for ICT deployment in the area	Majority of farmers are aware of the importance and benefits of ICT for business purposes but high cost and accessibility of ICT remain a major constraint
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1.4 How can ICT be used to enhance agritourism development in rural communities?

Provision of ICT infrastructure such as electricity will help farmers to be able to make use of these technologies to interact with agritourism stakeholders	ICT can be used as a platform for farmers to access information relevant to agritourism in a quick and affordable manner	Majority of farmers lack ICT skills which is needed in order to be able to make use of these technologies to enhance development	The use of ICT by farmers can help in reducing travelling and communication costs in agritourism industry	ICT can be used as a marketing tool to help farmers markets their agritourism products and services to a wide range of market	Farmers can make use of ICT to store information and send messages in an affordable manner through the use of SMSs and online messages as well
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APPENDIX G: GOVERNMENT OFFICIAL'S INTERVIEW RESPONSE

Respondent 21	Respondent 22	Respondent 23
1.1 What technologies do agritourism farmers use in rural communities?		
<p>Farmers in rural communities of Lesotho use the following technologies in their businesses: radio, television, cellphones, landline phones and computers. Majority of agritourism farmers in rural communities rely on cellphone, compared to those who use other technologies at work place, the reason being its affordability as well as mobility.</p>	<p>Some farmers find the use of landline phone, television and radio as a better means of communication and information sharing because they are easier to use regardless of their age, education status, income even mobility. These types of technologies save them time and money. So of the technologies that are being used include: radio, cellphones, television, landline phones, computers, even fax machine to make orders.</p>	<p>Technologies agritourism farmers use in rural communities of Lesotho consist of radios, televisions, cellphones, landline phones, computers and the Internet. All these technologies are used to get access to information relevant to agritourism products and services.</p>
1.2 What information do agritourism farmers need to successfully run their farms?		
<p>Farmers need information on government and private sector funding and they should be able to know where and how to get access to this kind of information.</p> <p>Currently most of our rural farmers get access to information through radio, television, others farmers and family members, these media outlets are inadequate and provide them with limited information that can assist them</p>	<p>Farmers need information on the best practices. This information includes knowing and getting access to relevant information regarding the policies and regulations that govern the establishment of an agritourism farm.</p> <p>Farmers need to have proper information on where and how to register their farms, information on taxes and remuneration of farm workers as well as legal issues</p>	<p>Majority of farmers in rural communities are struggling to get access to government funding because they do not use proper information channels. This is because channels such as internet are expensive to use especially to farmers whose means of income if from their farming businesses. Some farmers find it too expensive to purchase, use or even maintain these technologies.</p>

move confidently into more productive strategies.	pertaining to venturing into this type of business.	
1.3 What are the factors that influence the use of ICT in agritourism?		
<p>Although majority of farmers use different types of technologies in their farming businesses, it does not mean they use them to their fully extend. Access to electricity is some communities hinder the usage and access to some of these technologies</p> <p>majority of farmers in rural communities do not have fund to purchase modern technologies, they find it expensive to use and maintain therefore do not consider owning some of these technologies</p>	<p>Some of the farmers in rural communities do not know how to make use of certain technologies. This is because most of their work involves field work and they never had motivation to learn</p> <p>from my experience not only farmers but people with higher educational attainment are likely to know and make use of ICT more than the ones with less education</p>	<p>Some barriers such as legislative issues also remain major factors as farmers do want to comply with rules and regulations especially when it comes to opening a new venture. Sometimes they do not get funding from the government because their farms are not registered.</p>
1.4 How can ICT be used to enhance agritourism development in rural communities?		
<p>Most of the tourists do not know about the existence of some of these agritourism farms; However can get to information on these farms through the use of internet...”</p> <p>Farmers who have access to the internet can use it to search and compare their products and prices with their competitors, do transactions as well as bank on the internet.</p>	<p>Majority of respondents recommended that farmers use of ICT to build relationship with potential customers, suppliers and other stakeholders involved in the industry through the use of electronic media.</p>	<p>Majority of farmers own radios and television compared to other technologies and can use these technologies to gain access to information. Technologies such as radio and television provide necessary information, are easily accessible to remote and rural communities and regarded as the most powerful tools by rural communities.</p>

