

ACCESS AND USE OF AGRICULTURAL INFORMATION BY THE FARMERS OF

ETUNDA IRRIGATION PROJECT

**A research project report submitted in partial fulfilment of the requirements for the degree
of Bachelor of Arts in Library and Information Science (Honours) to the University of
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ABSTRACT

This study aimed at examining the access and use of agricultural information by farmers in Etunda irrigation project.

A case study design was used and data were collected using interview. The population was the farmers of Etunda project and made use of convenience sampling to select Nine (9) farmers to respond to interview questions. The data collected was analysed applying content analysis.

The findings of this study revealed that the farmers have challenges of accessing latest and up to date information for farming. The respondents indicated that the availability of information in languages they did not understand or that was irrelevant to their circumstances had an impact on their information-seeking behaviour. They also mentioned that the majority of the farmers lacked the funds to own computers or pay for Internet access, and they lacked the knowledge necessary to do Internet searches.

A solution on how to improve information has been proposed. The researcher recommends that Ministry of Agriculture, Water and Land reform (MAWL) and Ministry of Education Arts and Culture (MEAC) work together to routinely provide the library to farmers. Farmers' information demands and information-seeking habits should be periodically evaluated. They must jointly conduct workshops to introduce farmers to information resources, promote information sharing among farmers, and give farmers access to computers and the Internet. Additionally, information needs to be repackaged into local languages and accessible formats for farmers.

DEDICATION

I dedicate this work to my mother Hangada Albertina you are my rock, my source of courage, and my inspiration. Knowing that I couldn't have gotten this far without your help in shouldering the cost of my education, I stand here today. Although I'm sure it was difficult for you, Mama, you succeeded despite all circumstances. I'm still remembering the last word my late grandmother Josephina Hamukwaya said to me before she passed away. Grandma, you kept your promises, and your devoted daughter provided me with the support and knowledge I required.

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I would also like to thank UNAM library staff for assisting me with required information sources.

Finally yet importantly I want to express my gratitude to all the farmers who took part, without whom this study would not have been possible.

DECLARATION

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Signed: *Erastustomas*

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ABBREVIATION AND ACRONYMS

AI	-	Agricultural Information
DVD	-	Digital Video Disc
EBSCO	-	Elton B. Stephens Company
MAWL	-	Ministry of Agriculture, Water and Land reform
MEAC	-	Ministry of Education, Arts and Culture
NLAS	-	Namibia Library and Archive Services
FtF	-	Face to Face
GDP	-	Gross Domestic Product
ICT	-	Information Communication Technology
LIS	-	Library and Information Science
MSN	-	Microsoft Network
UNAM	-	University of Namibia

CHAPTER 1: INTRODUCTION

1.1 Introduction

This chapter includes the orientation of the study, the statement of the problem, the research objectives, the significance of the study, the limitations of the study, the delimitations, a summary of the methodology, definition of the key terms and layout of the report.

1.2 Orientation of the study

The Ministry of Agriculture, Water and Forestry maintains to make a contribution to the development of agronomic merchandise which can be primarily based totally on irrigation in Namibia by conducting the Green Scheme initiative wherein the primary purpose is to grow the agriculture's contribution to the country's Gross Domestic Product (GDP) and at the equal time achieve the socioeconomic improvement and advertising of the communities which can be located inside regions which can be appropriate for irrigation, however also to uplift the abilities improvement and human sources to probably escalate multinational assignment and ease the interchange of suitable and inadequate resources with bordering international locations on this regard in the irrigation sub-sector (Yule, 2019). The irrigation changed into created as an initiative that contributes to meals safety and manufacturing; to help sustainable financial growth, to reduce poverty and help for commercial irrigation farming. These Green Schemes are especially in far flung regions so groups near the Projects depend on them for meals and income, with Etunda Irrigation Scheme being one of the few Green Scheme. Etunda Irrigation Scheme Project is one of the biggest schemes both in length and maize manufacturing in Namibia, similarly to the maize, they've taken the horticulture course of manufacturing tomatoes, potatoes, onions to say a few.

The farm is nearly 700 hectares massive for which 350 hectares is a business plot that is used to develop maize and various agricultural cereal plants through small scale farmers (Agribank, 2017). Etunda continues to be one of the important meals and employment deliver with inside the north. The figure below shows the location of Etunda, Namibia and in its own region.

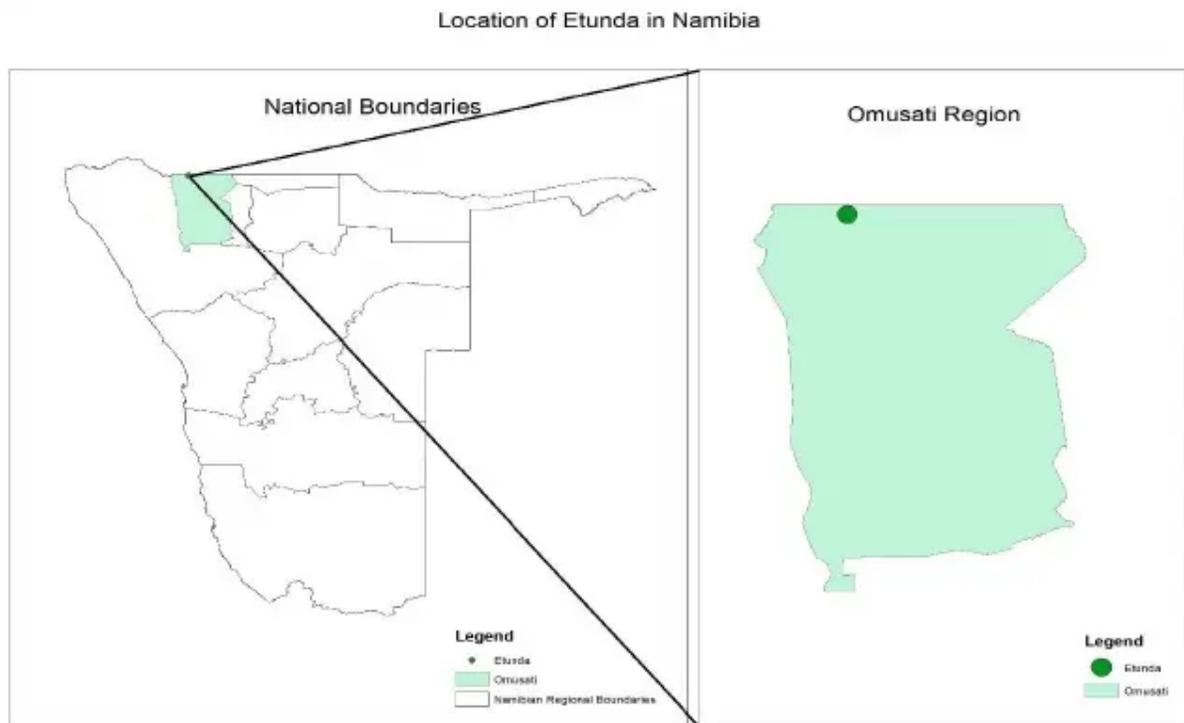


Figure 1. Etunda irrigation project location

Agricultural information (AI) has been explained by authors such as Yule (2019) and Mabhiza (2016) as a set of abilities and competencies for figuring out, accessing, and utilizing agricultural records for stronger agricultural productivity. A study performed in South Africa on agricultural information literacy of farmers suggests that farmers lacked abilities in figuring out the research records they preferred. Agricultural information (AI) is provided to improve and boot the farmers experience in farming (Brandt, 2016). In the past farmers didn't have access to libraries where they can get extra knowledge on how to do farming (Brandt, 2016)?

Kavithaa et al. (2014) carried out a qualitative survey on the information seeking behaviours of daily farmers to analyze the information seeking behavior of daily farmers in selected district of Tanzania. Kabelele and Akakandelwa (2018) also used a qualitative study specifically for Namibian farmers. As much as these researchers admire qualitative research because of its depth, they feel like Kavithaa et al. (2014) research was not in the context of Namibia. And this made them to come up with the research for farmers in Namibia. In their study of information seeking behaviours of farmers Kavithaa et al. (2014) and Kabelele and Akakandelwa (2018) found that farmers mostly depend on each other for the exchange of information.

Limited access to latest agricultural information sources to farm, is one of the challenges faced by the farmers of Etunda irrigation project in carrying out their different duties. Farmers are limited in their capacities to access and use agricultural information in many ways for example technology limitation, non-availability of Agricultural information sources lack of education and they mostly use the old way of farming which takes time and may not be able to produce enough food for the nation. All this can make them fail to perform their role because they may not understand what relevant agricultural information is needed and how and how they can get it with efficiency.

Etunda irrigation project farm that is located in the area of Ruacana, about 150 km west of Oshakati in the Omusati region which is in the northern side of Namibia. The irrigation project was established in 1993 by the Namibian government as part of the green scheme under the Ministry of Agriculture to attain food self-sufficiency at household and national levels, to create jobs, to increase domestic agricultural production and contribute to the country's Gross Domestic Product (GDP) Kaapanda (2015). It is about 700 hectares in size which is divided in half for small scale and commercial farming.

1.3 Statement of the problem

Nghinomenwa (2021) states that Etunda Project is failing to produce enough food for the community. Roberts et al. (2016) states that most of the agricultural project do not produce enough food due to that they are not provided with agricultural information to boost their knowledge and fill the information gap of the individuals. Although farmers in Etunda may be doing well in their farming duties, it is necessary to know how well equipped they are with agricultural information to help the project produce more agricultural products than usual. There is no library in the area of Etunda where farmers can go access and use agricultural information.

Farmers lack the knowledge on information seeking behaviors due to that they are not well educated and most of them do not have knowledge on how to use technologies to access the latest information on farming. Therefore, this study will look at some of the suitable models of information seeking behaviours. The findings may be used to come up with information services for Etunda, to meet farmer's information needs.

1.4 Research Objectives

The main objective of this study is to investigate the access and use of agricultural information by Etunda Irrigation Project members. The following are the sub objectives:

1.4.1 To establish the information needs and information seeking behaviour of Etunda farmers.

1.4.2 To determine the information literacy levels of the farmers.

1.4.3 To find out the challenges the farmers meet in seeking for information

1.4.4 To recommend solutions on how to improve information literacy amongst the farmers.

1.5 Significance of the study

Significance refers to what the study means and how it is applicable to the real world (Matsveru, 2013) The findings of this study are important in that they could provide an understanding of

Etunda Irrigation Project farmers information needs and their information seeking behaviour so that their information needs can be attended to. It could influence policy and decision makers (top manager in Etunda) and information providers (Ministry of Education and Namibia Library and Archive Services) to provide information services in the community of Etunda irrigation project. It will also contribute to the body of knowledge on the subject of agricultural information to farmers.

1.6 Limitations of the study

Limitations are the shortcomings, situations or impacts that can't be managed via way of means of the researcher (Flick, 2018). Therefore, the limitation of this study is that the investigation will only focus on Etunda irrigation farmers but not all the farmers will be interviewed, the researcher will only interview workers that will be on duty. In other words, the group of farmers that will be available will represent the whole project farmers. Therefore, the findings will not be generalisable to other agricultural projects. However, the findings and recommendation obtained will be available and applicable to all agricultural projects and the study may also provide useful information to other agricultural projects.

1.7 Delimitations of the study

Theofanidis and Fountouki (2018) define delimitations as the boundary of the research study based on the researcher's decision of what to include and what to exclude. The population of this study is limited to the members of the Etunda excluding all other farmers in the community.

1.8 Research Methodology

A qualitative approach was selected for this study. The benefits of employing a qualitative approach is to tell a story of a particular group experience in their own words. In this case the

individuals are the farmers at Etunda irrigation projects. The study used interviews as a data collection method. The population included the farmers of Etunda irrigation projects.

The major sampling frame was a convenient sampling which included only the members of the irrigation that are available, in this case the researcher will use convenient sampling until saturation is reached. A semi-structured interview guide was used as a research instrument of this study, one in English for those who prefer English and another one in Oshiwambo for those who were interviewed in Oshiwambo.

The researcher ensured replication of the study by recording each and every step of the research. The research also compared responses of different participant for anomalies and some of the questions were repeated at different stages of the interview to verify consistence. A phone was used to record the whole process. The data that collected were processed. The processing involved checking statements made by the participants from the interviews. The researcher also used content analysis to analyse qualitative data. The researcher studied the data carefully and organise them into themes in accordance with research objectives.

1. 9 Definition of key terms

The section attempt to clarify the term used in this study.

Access: Daniel (2018) explain access as the right to receiving information related to agricultural production action from different sources such as mass media, extension service (advisory service, orientation about seasonal activities information, training, field days, demonstration, visits), on-farm research, etc. including its frequency.

Use: Daniel (2018) also explain the use as converting into action the accessed agricultural information by the settler farm households to perform the agricultural production activity. The frequency of converting received information into action is also considered.

Irrigation project: According to Adamu (2013) irrigation project are the projects that consist of engineering (or hydraulic) structure that collect, convey and deliver water to areas on which crops are grown.

Gap: A gap is an encounter with a discrepancy or lack of sense in a human's environment. Dervin (1992) defines gap as, "a state that arises within a person, that might be filled by information or by some other kind of help or bridge (cited in Kudu, 2017, p. 228). In this study a gap refers to lack of information or skill to perform the desired duties.

Green scheme: Green Scheme means the initiative of the Ministry of Agriculture, Water and Rural Development to encourage the development of irrigation based agronomic production within the agro-industry in Namibia with the aim of achieving various economic and socio-economic objectives (Nghinomenwa, 2019).

Information behaviour: according to Kudu (2017) information behaviour "encompasses information seeking as well as the totality of other unintentional or passive behaviours ..., as well as purposive behaviours that do not involve seeking, such as actively avoiding information" (p. 20). In different words, information behaviour refers to what a person does to fulfil an information need.

Information: The word "information" is derived from the Latin word "informare" which means, "giving form" or "to design. Information is data presented in a comprehensible form to which meaning has been attributed within the context of its use (Yule, 2019). In different words certain data is considered as information if it convey to meaning to an individual that receives it.

Information literacy: Information literacy is the ability to find, evaluate, organize, use, and communicate information in all its various formats, most notably in situations requiring decision making, problem solving, or the acquisition of knowledge (Sang and Cheriuyot, 2020).

Information need: Matsveru (2013) define information need as “not a primary need, but, first, a secondary need that arises out of needs of a more basic kind; and second, that in an effort to discover information to satisfy a need, the enquirer is likely to meet barriers of different kinds” (p. 25). According to this study Information need is the information required by a person to carry out a task.

Information seeking: Matsveru (2013) define information seeking as, “a sub-set of information behaviour that includes the purposive seeking of information in relation to a goal” (p. 38).

Farmer: An individual who do a combination of raising field crops, poultry, livestock’s or other living organism for food or raw materials.

1.10 Layout of the research report

The research report is made up of 5 chapters in total. Chapter 1 introduces the study and discover the information seeking behaviours through the orientation of the study. It presents the statement of the problem, the research objectives, significance of the study, the limitation, the delimitation, a summary of methodology used to conduct the research and the definition of key terms.

Chapter 2 presents the literature review and a conceptual framework that guided the study. Chapter 3 presents the methodology used to conduct the study. Chapter 4 highlights and analyses the data presentation and Chapter 5 deals with the findings, summary, conclusions and recommendations of the study based on those conclusions.

1. 11 Chapter summary

This chapter has provided the overview of the study by discussing the orientation of the study, statement of the problem, objectives of the study, significance of the study, limitation of the study focused on the weaknesses in relation to the study's sample, which could not be generalisable to other farmers in the community except for Etunda project. The delimitation of the study, a brief methodology explaining the research design, population, sampling, data collection instrument as well as the trustworthiness, definition of terms and the layout of the research. Chapter 2 reviews the literature on information need and information seeking behaviour of farmers, information literacy level of farmers, challenges the farmers meet in seeking information and solution to improve information literacy amongst the farmers.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

In any study “literature review is undertaken based on the assumption that knowledge accumulates and that researchers learn from and build on what others have done” (Yule, 2019, p. 35), a number of databases were searched (Library genesis EBSCO HOST and UNAM e-resource). The researcher has noted that a number of studies have been conducted on agricultural information. However very little was found on information need of farmers. A number of research have been conducted on access and use of agricultural information to farmers in general. However, nothing was found on the access and use of agricultural information by farmers in Etunda.

Since literature on access and use of agricultural information by farmers of Etunda irrigation project could not be found, the literature review was expanded to include similar studies such as access and utilization of knowledge and information by aquaculture farmers in Namibia.

The literature review is guided by themes derived from the objectives as stated in chapter 1, which are as follow:

- ❖ Information need and information seeking behaviour
- ❖ Information literacy
- ❖ Challenges in seeking for information
- ❖ Solution on how to improve information

2.1. Information need and information seeking behaviors of farmers

It is significant to define important words that make up this review, before discussing the information needs and information seeking behaviors of farmers in Etunda. This section will

outline ‘‘Access’’, ‘‘Use’’ ‘‘agricultural information’’, ‘‘information need’’, ‘‘information seeking’’ and ‘‘information behavior’’ as these terms are important in understanding the subject under study.

2.1.1 Agricultural information

Agricultural information can be described in many ways, Lwonga (2011) ‘‘defined agricultural information as the various sets of information and messages that are relevant to agricultural production activities of farmers such as crop production and protection, animal production and management, and natural resource production and conservation’’ (p. 180).

Fafchamps and Mainten (2012) defined agricultural information as the data for decision-making and as a resource that must be acquired and used in order to make an informed decision. Wonga et al., (2011) classified agricultural information into two broad groups: pure agricultural information and agricultural information inherently tied to new physical inventions. Pure agricultural information refers to all the information that can be used without the acquisition of a specific physical technology. On the contrary, agricultural technologies are those that come in the form of agricultural inputs, management technologies facilitating farm management, and marketing and processing equipment.

Drawing from various definitions, the researcher conceptualised agricultural information as both agricultural messages through extension and embodied in agricultural technologies and shared between the actors in the agricultural extension system.

2.1.2 Information need

Having defined agricultural information need it is also imperative to define the concept information need. Cole (2011) describe information need as an individual or group's desire to locate and obtain information to satisfy a conscious or unconscious need. Yule (2019) has referred to as a ‘‘social circle’’ or ‘‘social network’’. When the social network theory is applied to

information needs, the premise is that, “social networks to which individuals adhere affect the way in which they seek information” (Yule, 2019, p. 20). Bruce (2005) has identified four overall conclusions about needs. Needs are instrumental, usually contestable, necessary and are not always a state of one’s mind. Needs, as Green points out, are instrumental in the sense that when they are followed they help one to reach an anticipated goal. Zu and Wibrock (2003) argues that real needs are neither always known nor precisely formulated and May not lead to positive steps being taken to secure the information (p. 50). According to Green, needs are usually contestable because they are different from wants. A need is a necessity without which one may not be able to satisfy primary needs while a want is something one can live without. Last but not least, needs are not necessarily a state of mind, for it is possible to be unaware of one’s true need (pp. 70-78). Zu and Wibrock (2003) have rebounded that information needs vary according to users’ membership in professional or social groups, their demographic backgrounds, and the exact requirements of the task they are performing (p. 100). In other words, the information need leads to information seeking.

Etunda project serve as an important green schemes in the country and the farmers came from different towns with different religion, beliefs and so on. Their information seeking behaviors could therefore be affected by their different settings. However, it is the “inner state” referred to above that drives the different farmers to different sources of information. Such sources could be public libraries or other farmers.

It is also crucial to define information seeking behaviors

2.1.3 Information seeking behaviours

Krikelas (1983) described Information Seeking Behaviour as a “consequence of a need perceived by an information user, who, in order to satisfy that need, makes demands upon formal or informal information sources or services, which result in success or failure to find relevant information”.

In his study on Access and Utilisation of knowledge and information by aquaculture farmers in Namibia, Yule (2019) found that farmers rely heavily on themselves when they are in need of information.

A survey by Matsveru (2013) of farmers in Europe reveals that farmers struggle to maintain friendships. In fact, 382 (61%) farmers out of the 627 43 participants admitted that they had no close friends. Matsveru (2013) reiterates that, “when the social network theory is applied to information needs, the premise is that the particular social networks to which individuals adhere affect the way in which they seek information” (p. 166). This is a hypothesis the researcher is trying to confirm in this study.

Farmers are not only information seekers but are also information users. They use information not only to their farming duties but also use information to educate each other. According to Matsveru (2013) pastors use libraries when they travel to towns like Oshakati Regional library though it’s far, in many cases they construct their non-public series at some point of their time of training. When they visit a library, they generally tend to function independently of librarians. He went further to mention that pastors seek for information by themselves, and browse shelves by themselves. Matsverus study focuses on information need and information seeking behaviors of pastors rather than farmers serving in a local project. However, the researcher finds Matsverus study helpful as it shows how information seeking behavior is developed in the lives of the farmers-to-be.

2.2 Information literacy

According to Sang and Cheruiyot (2020) Information literacy is the ability to find, evaluate, organize, use, and communicate information in all its various formats, most notably in situations requiring decision making, problem solving, or the acquisition of knowledge. It is a combination of research skills, critical thinking skills, computer technology skills, and communication skills.

While there are no studies carried out on information literacy of farmers in Etunda, the researcher searched a number of information sources and found a study by Sang and Cheruiyot (2020), which interestingly revealed that information literacy programs help farmers to measure themselves so as to be able to positively determine the extent of information needed, access information efficiently, assess critically and integrate information into their knowledge base and to use information effectively. Sang and Cheruiyot (2020) found that graduate students mainly utilised journal articles more than books, whereas the general farmers prefer to get their information from various media such as radio, television, posters, and meetings.

Osokoya et al., 2014 confirmed that although production is growing in irrigation projects in many developing countries, poor information access constrains its ability to bring widespread economic and livelihood benefits. This information deficit impinges most particularly on those already disadvantaged small-scale producers and supply networks in rural areas, and poorer consumers more generally. The steady supplementation and replacement of agricultural products into agricultural food markets in domestic and international contexts also brands traditional information systems increasingly non-functional. While marketing is broadly recognised to improve welfare within 69 agricultural food value chains, constraints on making good marketing decisions have been relatively overlooked.

The researcher posits that most of the farmers have a low agricultural information literacy, due to that they are not well educated. Most of the Etunda workers also cannot read English and this makes them struggle to use information, as most of the information is available only in English and not in their preferred language which is Oshiwambo. The farmers mostly use old ways of farming due to the unavailability of latest agricultural information.

2.3 Challenges in seeking for information

Shah and Gonzalez (2010) focused on the information seeking challenges encountered by battered women. The findings were that women knew what kind of help they wanted, even though they could not always define this help to match system terms. In a study, “Unearthing farmers' information seeking contexts and challenges in digital, local and industry environments”, Starasts (2015) reveals that the two most significant challenges to information service are locating and making contact with potential helpful sources and matching the type of help needed with the type of help available. In this study the researcher investigated whether the farmers knew what information they wanted and how to access it. According to Starasts (2015) Information Communication Technologies (ICTs) are the ‘electronic means of processing, capturing storing and communicating data (p. 4). ICTs are seen as being identical with the Internet, and they refer to opportunities offered by the coming together of data processing techniques, electronic media and telecommunications. He further explains that ICTs are merely a technology-based means of communicating data, enhancing knowledge, increasing productivity and generating new products and services. However, it must be noted that technologies have no inherent value for development in themselves. The use of ICTs by farmers will help in the capturing, processing, storing and communication of information. This study therefore investigated how often farmers use ICTs for farming services. Above all, accessibility of information requires a system of constructive

partnerships among varied individuals, institutions and interests. Wilson's (1996) Information Behaviours Model includes the concept of intervening variables into information seeking behaviours. These intervening variables can be classified as; personal, interpersonal, situational and information source characteristics. Wilson's concept of intervening variables agrees with Lilley's (2008) five characteristics that have an impact on information seeking:

- Having a relatively better education;
- Being mostly multilingual in a cross cultural environment;
- Having better social participation;
- Having more exposure to different kinds of agricultural information resources.

If farmers are not educated, if they are unable to read, if they are not known or do not participate in community activities they may not access agricultural information even though the information may be available. Personal challenges include education levels, knowledge base, and other factors, like being computers illiterate. Formal education, both secondary and tertiary is an important facet in information seeking. Education is not only about knowledge and skills, but also the ability to seek information (Kristiansen, et al., 2005, p. 169). Shenton and Dixon (2004) identified low levels of education as a challenges to assembling and understanding information. They also testify that before their study they had a misconception that farmers have a low level of education but findings proved them wrong. Findings showed that some farmers are well educated. The lack of awareness about where and how to obtain information due to illiteracy has been identified by Fafchamps and Mainten (2012) as a major constraint to accessing information. The situation in itself may also impose barriers of an economic, political, geographic, or other nature. Some of these barriers may be agricultural policies or regulations (Fafchamps and Mainten 2012) Language is another situational barrier that can inhibit access to information. Namibia's population, though very small

(slightly 51 over 2 million), is highly diversified in terms of language. Even though English is now the official language, many of the information sources are still in Afrikaans. Another enemy of information accessibility is culture. Some cultures are known to favor reading while other cultures are strong in audio-visuals. This means that people who are stronger in audio-visuals rather than written information may not benefit from the available written information.

2.4 Solution on how to improve information access and use

Information literacy require someone to have an ability to identify, locate and access appropriate sources of information to meet the information need. The more farmers there are, the more varying information literacy they need. Snaveley and Cooper (1997) points out that it is impossible to obtain information from all prospective users, but at least some representatives of each user group should be available (p. 510). In the Etunda context, groupings extend beyond farmers. They encompass such variables as race, gender and education. Snaveley and Cooper (1997) argues that the ideas of what constitutes information literacy change over time as influence increases (p. 62).

However, when information literacy assessment is properly done, it enables information service providers to:

- Identify the difference between current provision and desired level of information literacy;
- Forecast future information literacy needs;
- Plan provision to meet such information literacy needed in good time

There are a number of means of examining information which are of relevance to the information literacy. They include interviews, brainstorming and the analysis of existing information services. In carrying out a solution to improve information literacy among the farmers, Dun (2002) has recommended a number of factors to be considered. These factors include: firstly, why information literacy is significant. Service providers have to consider the importance of data and the effects of

not giving information to farmers. Secondly, what the information need of these people are? The information needs of farmers must be identified so that the right agricultural information is provided. Thirdly, who provides these people with agricultural information? These could be public libraries. The fourth important question to ask is, what type of agricultural information do they use? These could be informal or formal sources of information. Lastly, what information literacy do they have? Here we are looking at what information literacies farmers have to manage both internal and external information. The above questions illustrate factors that several writers have recommended for the designing and implementation of the solution to improve information literacy of farmers in Etunda.

Mabhiza (2016) recommends solutions on how to improve information literacy of farmer when he states that the farmers need to write a letter to the information provider (Namibia Library and Archive Service and ministry of education) to help them establish a library in the area close to their farms which will function as an information Centre where farmers can go and access agricultural information. The establishment of the library can also help the farmers in Etunda to attend trainings on how to use technologies and be able to access information on the internet. The library can also help the farmers to access the wide varieties information containing farming methods that ensure fast ways of producing food on the small scale of farming.

2.5 Theoretical framework

The theoretical framework is the shape which could maintain or aid a principle of a research study (Yule, 2019). Drawn from the definition above one may understand that a theoretical framework thus refers to the agenda, outline, and theoretical construct of a research approach and normally comes in the literature review. The marriage between the people-orientated and technological-orientated fields of library science and information science has led to the use of diverse information

seeking models in library and information science (LIS) research (Yule, 2019). The models in this case is a way for thinking about a problem which attempt to describe an information seeking behaviours the causes and consequences of that action (Yule, 2019). Some of these models are Wilson's model of information seeking behaviours (1996), Devin's sense-making theory (1992), Ellis behavioural model of information seeking strategies (1989), Ellis (1989) and Kuhlthau model of the stages of information seeking (1991).

This study helps us to comprehend the information needs of farmers and how farmers seek information. The four models mentioned above will not be discussed in more detail however Wilson and Dervin models will be discussed in more detail upon which this study is based.

2.5.1 Wilson's (1996) model of information seeking behaviors

In this model Manish (2016) suggest that the 'intervening variables' that fall below third group institution with inside the photograph display how the information seeking boundaries evolve at some stage in the wishes of statistics. These are psychological, demographic, role-associated or interpersonal, environmental and supply characteristics. The 1996 version now additionally identifies 'statistics-in search of behavior' (the 5th institution of concepts in the figure), specifically passive attention, passive seek, energetic seek and on-going seek. the diagram bellow shows the models information flow.

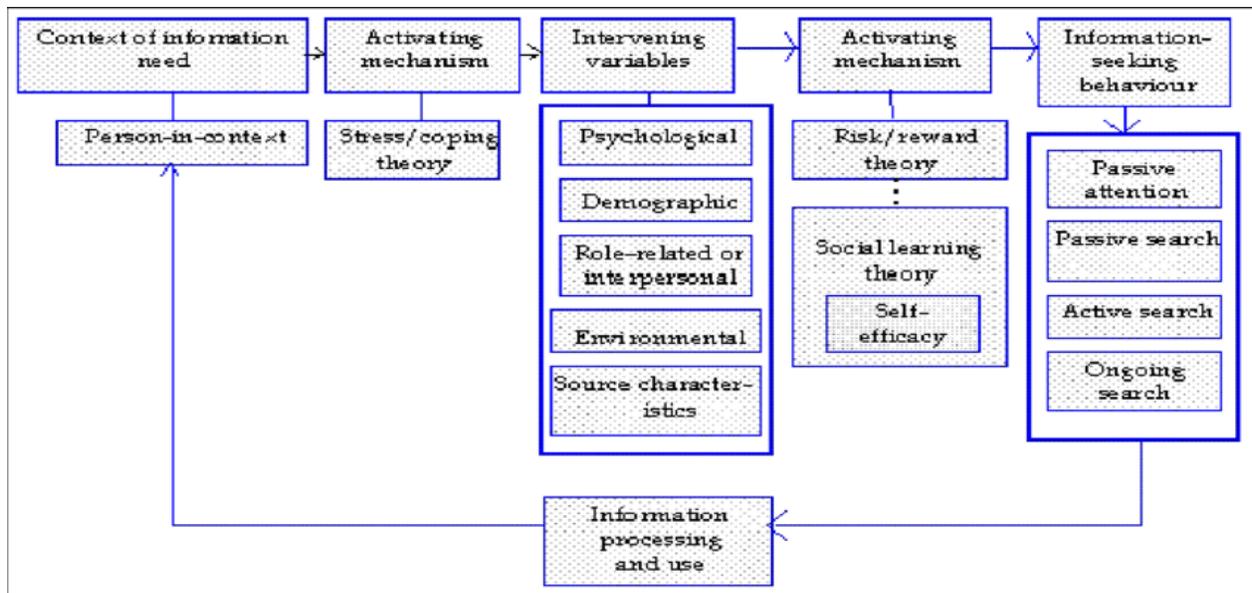


Figure 2.1 Wilson’s model of information seeking behaviours (Manish, 2016)

The foremost purpose on this revised version is if data needs are to be satisfied, ‘statistics processing and use’ will become a vital part of the remarks loop proven at the backside of the version. The 1996 version additionally gives 4 applicable standards as statistics in search of behavior to provide an explanation for users’ behavior. In the second one and fourth organization of principles in the above picture those mechanisms are represented as and the stress/coping, risk/reward, social mastering idea and ‘self-efficacy’. The activating mechanisms are mental factors which can be defined with the aid of using those one of a kind theories and which set off the person to continue with the statistics in search of process. Thus, Wilson recognized traits of some of human behavior fashions in his version. In this manner, the version attracts interest to the interrelated nature of statistics behavior idea, whether or not the idea is drawn from different disciplines or from the studies traditions of Information Science.

2.5.2 Dervin’s Theory of Sense Making

Dervin’s theory have developed over a number of years and is not only an information behavioral model. She shows this theory as a fixed of assumptions, a theoretic perspective, a methodological

approach, a fixed of studies methods, and a practice' designed to address facts perceived as a human device designed for making feel of a fact assumed to be each chaotic and orderly. However, sense-making is applied in phrases of 4 constituent elements which are: Situation wherein facts issues arise; Gap, which identifies the distinction among the contextual situation and the favored scenario outcome, that is, the results of the feel-making process, and bridge, that is, a few approach of ultimate the space among scenario and final results. To bridge this gap, people are searching for facts to make new feel and use this fact to assist them in ordinary life. The final results represent the usage of facts to finish a task. This makes the feel-making enjoy a holistic enjoy Situation Gap. She presented this element in a term of a triangle factors: Situation, Gap/bridge, and outcome which is represented by the picture below.

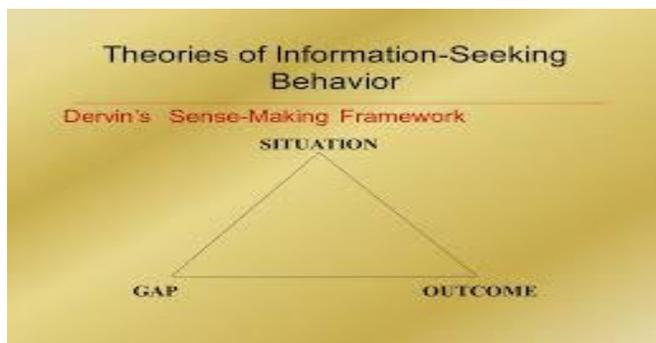


Figure 2.2 Dervin's sense making theory (Manish, 2016)

The model highlights the questions about the nature of the situation and Cleary depicts the challenges that an information seeker faces in reaching the desired outcome by using the information to bridge up the gap.

This research used Dervin's theory and Wilson's model as an outline to establish the information needs and information seeking behavior of farmers in Etunda irrigation. The reason why these were preferred for this study is that they are well developed than Ellis' and Kuhlthau models. A main standard for their selection is also that the models attempt to portray and explain a sequence

of behavior by referring to relevant variables, rather than merely indicating a sequence of events. Another reason why the researcher is going for these two models is that they specify something around information needs and sources, which is what this study is trying to examine.

The models of information seeking by Kuhlthau (1991) and Ellis (1989) are universally applicable to any domain, each depicting a series of cognitive stages or behavior through which individuals are thought to move as they find and evaluate information. However, these models make no claim to think about many of the factors and variables generally considered in information seeking research.

2.6 Chapter summary

This literature review has addressed all the research objectives posed in the study and what has arisen is that there is no research on the access and use of agricultural information by the farmers of Etunda irrigation project. The literature review has also shows that very little has been published regarding this topic. It also reveals that while service providers exist with a plenty of agricultural information, farmers still face many problems in either being aware of its existence or accessing it. The next chapter focuses on the research methodology.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology of this study on the access and use of agricultural information by farmers of Etunda irrigation project. Research methodology refers to the form of data collection, analysis and interpretation that can be used in a study and it is also seen as the overall approach to research which is linked to the paradigm or theoretical framework (Kothari, 2014). The chapter includes the philosophical assumption, the research design, the case study design, the population, sampling, data collection method, data collection instrument, trustworthiness, procedures, data analysis, research ethics, evaluation of methodology and the chapter summary.

3.2 Philosophical assumptions

This study followed an interpretivist research paradigm. This paradigm focuses on the qualitative type of research. This is because it is largely influenced by multiple created realities. Mabhiza (2016) summarises the meaning of paradigms as a set of beliefs that guide action exactly in the research context and to reflect the researcher's worldview that is composed of four sets of philosophical beliefs, namely axiology, epistemology and ontology.

If a paradigm is not chosen as the first step, as there is no basis for the preceding choices regarding methodology, literature or research design. Paradigms are delivered in studies as they assist the researcher to recognize how the studies can be inspired in totally exclusive modes. The three paradigms to select from are the positivist, interpretive and emancipatory. Positivist paradigm makes a specialty of quantitative methodology, utilizing experimental techniques regarding the checking out of variables and proving relationships among exclusive

variables. It also relates to “realism as it emphasizes on the scientific method of explaining different events and avoids any influence from perceptions and thoughts” (Khaldi, 2017). The second paradigm is the interpretive paradigm. Kaldi (2017) states that that the interpretive paradigm focuses on the qualitative type of research. Because it is largely influenced by multiple constructed realities. This means it is interactional and tends to have observer subjectivity. The third paradigm a researcher can choose is the emancipatory paradigm. This paradigm is usually utilized in social studies wherein the human beings being studied are given the reason and approaches of the studies and the researcher avoids being biased in any respect. In this study, the interpretive researcher focused on human experiences, opinions, history and culture of the participants and the process of access and use of agricultural information by farmers.

3.3 Research design

Creswell and Creswell (2017) states that research design can be described as a hard and fast of hints that display the researcher a way to attain the intention of the study. The intention is to cope with the studies problem in the end. Research design and method have to do with the philosophy of social enquiry. It includes how the researcher involves gather understanding and the strategies of information collection to be used (Flick, 2013). There are numerous qualitative studies designs, particularly ethnography, grounded theory, case studies, phenomenological studies and narrative studies.). This is qualitative research sign was a case study design. The research targeted the information concerning the access and use of agricultural information by farmers. The study used a semi structured interview guides.

3.3.1 Case study design

The case study research design was adopted as it's miles a complete technique of carrying out in-depth social studies that research's a social unit in its complete perspective. A case study can

be described as a specific problem that is studied via way of means of framing an inquiry, making plans a route of action, attempting to find clues, producing tentative answers and maintaining opportunities open (Rule, et al. 2011). Case studies is exploratory in nature and is commonly used to generate models and speculation of the procedure under research in a selected context. An exploratory case study normally starts of evolved with ‘what’ or ‘who’ questions and frequently precedes an extra in-depth study (Khaldi, 2017). In a case study, the researcher makes a specialty of a unit of study. In this study the research focused on Etunda irrigation project as the unit of study. The researcher sought for more comprehensive information regarding the access and use of agricultural information by farmers of Etunda project.

3.4 Population

Sherbinin, et al. (2017) describes population as the complete set of items or humans which might be the point of interest of the studies and that which the researcher seeks to decide positive characteristics. The target population of this study was the farmers of the Etunda irrigation project.

3.5 Sampling

Mujere (2016) defines sampling as the study of the connection among a population and the samples drawn from it. The predominant benefit of sampling, as compared to the gathering of data on the entire population is that amassing facts on a pattern is much less time ingesting and is much less costly for the reason that expenses of studies are proportional to the wide variety of hours spent on data collection (Marshal, 2021). In different words, sampling is a sensible manner of including a balanced cross-segment of all of the applicable instances at the same time as ensuring its far representative.

There are sorts of sampling techniques specifically probability and non-probability sampling. Non-probability sampling refers to sampling strategies wherein subjective judgment performs a role in

the choice of the pattern (Mujere, 2016). Examples of non-probability sampling encompass: convenience sampling, purposive sampling, snowballing, and quota, judgmental and dimensional. In contrast, in probability sampling every member of a populace has the same risk of being decided on as a member of the pattern (Mujere, 2016). Examples of probability sampling encompass random sampling and systematic sampling. In this study, convenience sampling had been used to pick out participants.

Convenience sampling includes only those members of the study population who are available (Saunders et al., 2018). Meanwhile there are 88 females and 50 males in Etunda irrigation which add up to a total of 138 workers, there are about 80 small scale farmers at the project of whereby each small scale farmer has an irrigation field of about 4 hectares. The researcher conducted an interview with 9 farmers reaching saturation which is explained by Saunders et al, 2018 as the point in the research process when no new information is discovered in data analysis and this redundancy signals to researcher that data collection may cease.

3.6 Data collection method

The study used interviews to collect data. Interviews may be described as a qualitative studies approach, which includes conducting extensive man or woman interviews with a small wide variety of respondents to discover their perspectives on a specific idea, software or situation (Yule, 2019). Advantages of interviews encompass opportunities of gathering unique information on studies questions. Moreover, on this type of primary information collection, the researcher has direct manage over the glide of method and has a chance to clear troubles in the course of the method if needed. Disadvantages, on the opposite hand, encompass longer time necessities and problems related to arranging suitable times with attitude pattern institution contributors to behavior interviews (Adam, 2015). Interviewing, as Mabhiza (2016, p.

160) argues, is 'a verbal and socially acceptable' manner of gathering information as it may be utilized in diverse conditions overlaying a number of topics. In line with this, as encouraged by the researchers (e.g. Yule, 2019; Mabhiza, 2016), interviewing has to be followed as a device for social studies because it allows obtaining 'direct' factors for human movements via a complete speech interaction. Interviews can take exclusive bureaucracy; that is, face to face (FtF), telephonic and maximum recently digital interviews via the Internet also are turning into very popular. Beside face-to-face (FtF) interview and cellphone interview the use of recent verbal exchange bureaucracy together with e mail and MSN messenger opens new approaches for qualitative studies employees for information collection (Yule, 2019). The kind of interview approach selected via way of means of the researcher can rely upon the advantages and disadvantages that are connected to each interview approach. According to Yule (2019), face to face (FtF) interviews may be audio / voice recorded with the permission of the interviewee. Using a voice recorder has the gain that the interview report is extra correct than writing out notes. However, voice recording additionally brings with it the danger of now no longer taking any notes in the course of the interview. Taking notes in the course of the interview is crucial for the interviewer, despite the fact that the interview is voice recorded: to test if all of the questions have been answered, in case of malfunctioning of the voice recorder, and in case of malfunctioning of the interviewer. Another drawback of voice recording the interview is the time a transcription of the voice recording consumes. Matsveru (2013) in addition shows that one hour of tape takes 5 to 6 hours to transcribe.

Interview methods were used to gather information from nine (9) farmers from Etunda project. Semi structured interviews allowed flexibility and rephrasing in which rationalisation become wanted. Yule (2019) argues that interviews facilitate adaptability of methods of questions and terminology to match the interviewee's heritage and academic level.

3.7 Data collection instrument

According to Haenssgen (2019) semi structured interview is when the interviewer follows a topic guide that provide an outline of the issues that the interviewer plans to cover, but with the flexibility to adapt the interview spontaneously to the topic arising in the conversation

3.8 Trustworthiness

Gunawan (2015) reports that qualitative studies is often criticized for lacking scientific rigour with bad justification of the strategies adopted, loss of transparency in the analytical techniques and the findings are a group of private evaluations situation to researcher bias. This is due to the fact phrases like validity, reliability and generalisability are more pertinent to quantitative studies. Mabhiza (2016) offer opportunity terminology related to credibility of qualitative studies and those are: reality price which is analogous to validity; consistency and neutrality that talk over with reliability and applicability this is comparable to reliability. Gunawan (2015) asserts that distinctive methodological techniques to qualitative studies encompass distinctive techniques to validity, making it not possible to broaden a universally widely wide-spread approach to the validation of qualitative studies. This manner validity in qualitative studies differs from validity in quantitative studies.

To ensure trustworthiness the researcher recorded each and every step of the research, to enable replication of the study. The essence of credibility in research is the extent to which a researcher can demonstrate the accuracy of the data collected (Mabhiza, 2016). The researcher verified data by comparing responses of the different participant for anomalies. Some questions were repeated at different stages of the interview to verify consistence

3.9 Procedure

Research procedure deliver a complete description of the way the researcher carried out the study. According to Flick (2013), the studies procedures should describe how the fieldwork became conducted, how gadgets have been administered and sufficient facts to permit the study's replication.

The researcher asked for permission to be allowed to enter the Etunda project and then approach the farmers in Etunda by asking their permission to be interviewed. Recording of the interview were done only where the participant has given permission to be recorded. Before the interviews, the researcher asked permission from the interviewee to record with a phone during the interview. Recording with a phone can assist Interviewer in case the researcher fails to take notes on every detail. Recording the interview discussions have assisted the researcher to remain focused on what was said while transcribing the notes.

3.10 Data analysis

The data that were collected were processed. The processing involved checking statements made by the participants from the interviews. The researcher used content analysis to analyse qualitative data. Content analysis consists of reductions, organisation, interpretation and substantiation of information (Sgier, 2012). In order for the researcher to examine qualitative information, content material evaluation approach changed into used. Opara (2010) described content material evaluation as contents of a selected frame of fabric this is unique and examined systematically for the cause of figuring out patterns, topics or biases. The researcher used the content material evaluation technique first through figuring out and growing the primary topics from the responses, classifying responses below one-of-a-kind most important topics through going thru transcripts of all of the interviews and eventually integrating topics and responses (Seers, 2012). According to

Sgier (2012), the very last step in qualitative information evaluation is making interpretation of the information, highlighting the means of information, instructions discovered and viable hints for similarly development and amendment. Opara (2010) defines content analysis as the means of analysing the contents of interviews or observational field notes to identify the main themes that emerge from responses given by the participants. The researcher studied the data carefully and organised it into themes in accordance with research objectives.

3.11 Research Ethics

Participants were informed on the purpose of the study and that participation is voluntary. They have signed a consent letter to indicate that they have participated willingly. Given the often-delicate relationships between researcher and respondents, reasonable protections were built in this research based on ethical considerations and requirements. Therefore, the information that the researcher received during the period of this study have treated every participant in confidence and purely for academic purposes. To ensure confidentiality, names of the respondents was not used or mention in the reporting of findings. Instead of names codes are used. Voice recordings from the interviews were stored electronically and protected by a password to ensure security of the information.

Interview transcript was stored in the cloud, the handwritten notes were shredded and recordings were disposed of. In line with the University of Namibia Research Ethics Policy.

3.12 Evaluation of Methodology

This segment seeks to assess the studies method that was used to conduct the research. Opara (2010) explains that each studies method has its very own strengths and weaknesses. This case study hired qualitative method of interviews in an interpretivist paradigm. This intended that appointments with the key members needed to be made officially to present the members time to

put together for the interview. Thus, on this study, the qualitative studies approach was designed to assure the trustworthiness, credibility, transferability and validity of qualitative procedures. This studies layout turned into suitable for this research because it aimed to locate the solutions to the access and use of agricultural information by farmers of Etunda.

The researcher experienced difficulties in getting hold of some of the farmers. Yule (2019) states that “arranging for interviews takes time” and there is no guarantee of getting hold of individuals on the set date and time”

In this study, the information gathering was delayed numerous instances because of the unavailability of a number of the contributors for interviews, however the researcher managed to analyse information as the data collection progressed, which assisted the researcher to make up on misplaced time till the contributors had been available. One of the blessings of a qualitative studies method is the ability that it permits the researcher to undertake new techniques as the research progresses. When engaging in data gathering, the researcher realised that the face-to-face interviews that had been first of all planned will be performed telephonically instead.

3.13 Chapter summary

This chapter dealt with the methodology of the study by outlining the methods and techniques employed in studying the access and use of agricultural information by farmers of Etunda. The research used the qualitative research approach in the form of a case study design. The target population, sampling and data collection methods that included interviews were highlighted in this chapter. Analysis of data were also outlined in this chapter. Data collection was analysed through content analysis with the aid of themes created based on the objectives of the study. Researchers that want to do similar studies, using the same research methodology need to take note of the

challenges outlined in the evaluation of the methodology section. The next chapter focusses on the analysis and the presentation of the data.

CHAPTER 4: DATA ANALYSIS AND PRESENTATION

4.1 Introduction

This chapter analyse and presents the data of the study: “Access and use of agricultural information to farmers in Etunda irrigation project” whose data was collected through interviews using two separate semi-structured interview guides, one in English and the other one in Oshiwambo. Data analysis in qualitative research comprises of preparing and organizing the data for example, text data as in transcripts or image data as in photographs for analysis, then reducing the data into themes through a process of numbering and condensing the numbers and finally representing the data in figures, tables, or a discussion. (Kothari, 2014). The reason for analyzing data is to combine all the collected data and then interpreting that data so that a conclusion for the finding can be formed.

This chapter consists of the undermentioned sections that are based on the parts of the interview guide.

- General information of the farmers
- Information need
- Information seeking behaviour
- Information literacy
- Benefit of information
- Challenges in seeking for information
- Solution on how to improve information

4.2 General information of the farmers

The data was collected from the cabbage and spinach farmer, farm manager, onion, tomato and garlic farmer, carrots farmer, pumpkins farmer, potatoes and sweet potato farmer, beetroot farmer, banana, orange and mango farmer and mahangu, asparagus and maize farmer.

Table 4.1 List of Participants

List of participants
Cabbage and Spinach farmer
Farm manager
Onion, Tomato and Garlic farmer
Carrots farmer
Pumpkins farmer
Potatoes and Sweet, Potato farmers
Beetroot farmer
Banana, Orange and Mango farmer
Mahangu, Asparagus and Maize farmer

The aforementioned respondents in Table 4.1 were the participants involved in the study and in order to achieve confidentiality no names were mentioned. The interviews were with the Cabbage and Spinach farmer, the Farm manager, the Onion, Tomato and Garlic farmer, Carrots farmer, Pumpkins farmer, Potatoes and Sweet potato farmers, Beetroot farmer, Banana, Orange and Mango farmer, Mahangu, Asparagus and Maize farmer.

The study sought to determine tasks of participants that work in Etunda irrigation project. The Onion, tomato and garlic farmer was responsible for growing onion, tomatoes and garlic on a small

scale, the Carrots farmer made sure the project produced enough Carrots. The Pumpkins farmer was responsible for growing Pumpkins only, the Potatoes and Sweet Potato farmers ensured that more potatoes and sweet potatoes were available to be sold. Beetroot farmer ensured that the beetroots were growing well and harvest them when its time, the banana, orange and mango farmer, ensured that there are enough bananas, mangos an orange to be consumed, the mahangu, asparagus and maize meal farmer, made sure mahangu asparagus and maize were available for the community.’

The study also sought to elicit the working experience of the participants in their field in order to ensure reliability of their response to the interview questions. They were asked the number of years they had been working for Etunda irrigation project. The findings are shown in the Table below.

Table 4.2 Number of years in Etunda

Respondents	Numbers of years as a farmer in Etunda
Cabbage and spinach farmer	6
Farm manager	8
Onion, tomato and garlic farmer	2
Carrots farmer	4
Pumpkins farmer	2
Potatoes and sweet potato farmers	3
Beetroot farmer	4
Banana, orange and mango farmer	4
Mahangu, asparagus and maize farmer	7

The table above shows that the respondents who had knowledge in their field for more than half a decade were the cabbage and spinach farmer, farm manager and mahangu, asparagus and maize farmer with 6, 8 and 7 years of work experience, respectively whilst the other farmers had 2 to 4 years of working experience. It can, therefore be established that all the farmers had adequate experience to give sufficient and reliable data on the study.

4.3 Information need

One of the objectives of the study was to find out the information need of the farmers in Etunda it was raised as a question to the participants and the findings shows that farmers did not know the importance of doing research to satisfy their information need. And they do not use any information to carry out their farming duties, they only do it the way they understand it.

Carrots, Potatoes, Sweet Potatoes, Beetroot, Banana, Orange and Mango farmers had to ask for clarification on the meaning and information need before they proceeded with the interview.

4.4 information seeking behaviours

A question was also raised on the information seeking behaviours of farmers the finding shows that no farmer sought information from anywhere except the farm managers who went to other green schemes such as the Sikondo green scheme in Kavango region and bring the agricultural information to the farmers, and the carrots and cabbage farmers who go look for information in Oshana regional library which is a bit far from the irrigation. During the interviews farmers were asked how often they search for information. Four farmers affirmed that they did 'research' as a way of equipping themselves for their farming tasks. One farmer said, "Without research, forget you can be an effective farmer of the Word!".

The Mahangu, Asparagus and Maize farmers wanted to use the library but they cannot make it every day because the libraries are very far from where they reside. They also said they always worked with Oshakati bookshops which sent them the required books. Pumpkin farmer said he asked other farmers for information. In consulting other farmers, it became clear that they accessed more experienced farmers and those whom they had known for a long time. All nine farmers indicated that they looked for information in agricultural books, the Internet and other farmers, but when they could not find the information, they looked up to God for answers through prayer. It was interesting to note that the farmers prayed when they got information and they prayed if they did not get the information.

4.5 Information literacy

One of the aim of the study was to find out the agricultural information literacy of the farmers in which the Carrots, Pumpkin, Potatoes and Sweet potatoes, Banana Orange and Mango farmer stated that they have never attended School in their lives and they do not know what agricultural information is all about.

The farmer manager indicated that he has graduated with a degree in agricultural economics and he was fully aware of what agricultural information is all about. He also stated that he has been trying to teach other farmers on what agricultural information is all about but there is a language barrier between the Beet root, Pumpkin, Cabbage and Spinach, Onion and Garlic and Mahangu, Asparagus and Maize farmers because they do not speaker English and they do not even understand most of the words.

The Cabbage and Spinach, Onion, Tomato and Garlic, Beetroot and Maize, Mahangu and Asparagus farmers stated that they depended on each other in order to share information and they sometimes went to the Oshana regional library to use computer to access information.

4.6 Benefits of information

A question was raised on whether the farmers feel knowledgeable about their work without using information. The findings show that they did not feel knowledgeable at all. Seven farmers stated that they asked other farmers in order to continue with their farming. The Carrots Farmer stressed that they paid transport to go to Oshakati or Outapi community library to access books and other agricultural sources.

He stated that they always had to look for agricultural information either on the internet or from others and even on the farm documents, Farm manager indicated that “Because information is the

only one that can boost food production on the farm”. The interview confirms that agricultural information is so beneficial to farmers to Etunda.

4.7 Challenges in seeking for information

A question on problems faced by farmers in obtaining agricultural information was asked during the interviews. During the interview, the majority of the participants (six out of nine) revealed that it was very difficult to get good agricultural books in Namibian bookshops. If one could be found, it would be expensive. Five of the nine respondents revealed that there was information overload on the Internet. They pointed out that having a lot of information can be a problem sometimes because one ends up not knowing what to take and what not to take. Lack of computer skills to search and get the right information from the Internet was mentioned by four out of the nine farmers as a factor affecting their information seeking. Five farmers pointed out that it was difficult to find information written in their mother language. Three farmers complained that even the agricultural books which were translated into their languages were wrongly translated. They complained that most of the agricultural books in their vernacular languages did not have cross-references, commentaries. The carrot farmers stated that” The location is a big disadvantage when it comes to information”. He cited lack of public libraries and unavailability of information sources such as newspapers. He added that there were very few farmers and had no libraries of their own. Some of the farmers in Etunda project were not agriculturally trained and there was very little exchange of information. The people were tribalistic and very reserved. Six of the nine farmers pointed out that even though information was available their main challenge was that it was difficult to understand as they found the terms used by agricultural scholars to be too technical. Shortage of money to buy the newspaper or to visit Internet cafes was given as another difficulty that some farmers were experiencing in their desire to be informed. When the researcher asked the

participants what encouraged or discouraged them when they were looking for agricultural information, majority of them said that they were encouraged when they found hidden meanings in a text. When they read a paragraph and they were able to find its meaning and apply it to the lives of their farming, it brought joy to them. Also when they saw their production changing positively because of the information they had used, it also motivated them to do more and better. One said he was encouraged when he watched DVDs of farmers who were experienced in agricultural industry, especially when they dealt with practical issues. Discouragement came when they could not find an explanation for some passages of words.

Of interest was the discussion with farmers regarding their use or the role of computers and the Internet? Although all the pastors interviewed used the Internet in one way or the other, most of them categorised their access as very limited. They admitted that the Internet was a good information source. This confirms the findings from the interview. All commented that they could find all kinds of information from the Internet. Three farmers mentioned helpful online agricultural study tools. Those who could not use the Internet admitted that they got assistance from their children but it was expensive to get access to the Internet or even own a laptop. Two farmers mentioned that the big temptation with the Internet was pornography materials. Another one mentioned information overload and the ability to select relevant information as a challenge when using the Internet. According to the data presented by farmers during the interviews, it can be concluded that challenges affecting farmers' information seeking behaviour included: information overload; shortage of computer skills; shortage of money to subscribe to relevant Internet websites, buy books or newspapers; unavailability of information sources in local languages; and lack of good agricultural books in bookshops. It was also revealed that one's working environment was a contributing challenges.

4.8 Solution on how to improve information

The last section of the interview sought the farmers' opinions and suggestion on how to improve farmer's information in Etunda. Several issues were raised in the interview as to how agricultural information could be improved. This section presents an analysis of the responses and opinions of the farmers. Only five respondents out of nine had responded to the question on improvement of agricultural information services. The content analysis of the comments by farmers reveals that farmers expected the Ministry of Agriculture, Water and Forest to play more leading roles in the provision of agricultural information services to farmers. The comments indicate that the farmers expected the Ministry to have a monthly budget to buy books for their farmers. While some farmers acknowledged that there were very few libraries, they recommended that the Ministry of Education should open their libraries to farmers in their communities. They also suggested that before graduation, farmer should be helped to build personal libraries that would help them in farming and that libraries should put in place systems of updating these information sources. Farmers argued that if information is available but inaccessible for one reason or the other, it is useless to them and their service distribution will never improve. A website could be created on which sources written by other farmers could be uploaded. Pumpkin farmer suggested that there should be a program that takes farmers from one place to another. For example, farmers in Etunda could be taken to a Sikondo project as part of educating them. Those in the Sikondo project could also be brought to Etunda for them to come to terms with the reality of the changing world.

4.9 Summary

The data in this chapter shows that the farmers needed a broad range of agricultural information sources to deal with a broad range of farming issues. The information also shows that farmers in Etunda relied mostly on the projects documents, the Internet, other experienced farmers, and personal libraries to access agricultural information. The data also indicated that more resources such as money, books and Internet and training was needed to reduce the information gap between what the farmers had and their service delivery. The next chapter discusses and summarises the findings, and presents conclusions and recommendations.

CHAPTER 5: DISCUSSION AND SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter discusses, summaries the findings and makes conclusions, recommendations, area for further research and the conclusion based on the findings. The discussion is on the findings from Chapter 4's content analysis of the qualitative data from the interviews. The summary is organized by the findings around which the data that was provided. The conclusions are in accordance with the specific objectives of the study of the study.

5.2 Discussions of findings

Yule (2019) states that just as scientific information is important to scientists, or business information to business people, agricultural information is important to farmers. Even in the most information-rich contexts, some people finds barriers to information seeking. While we often relate information barriers to physical restrictions, for example lack of information sources, there are other factors that affect information seeking. The issue of accessibility plays a very significant role because the success of farmers depends largely on their ability to access information. Several social, economic, political and environmental factors exist, which affect farmers' access to information. These factors pose a range of problems and if not sufficiently addressed, they can hinder farmers from accessing relevant information.

5.2.1. 1Information need and information seeking behaviours

The findings from the interviews showed that information is important for their agricultural tasks. This reinforces the views of many scholars that knowledge is power when effectively used and applied (Matsveru, 2013). People need information to function properly in their various roles, regardless of how well informed they are.

5.2.2 Information literacy

Information literacy in the digital age as a set of skills that require people to recognize when information is needed and the ability to find evaluate and effectively use the information they need (Yule, 2019). The participant indicated that most of the farmers were not information literate and they need to attend information literacy training to improve their knowledge and thus satisfy their information needs through internet and books. Findings from this study were inconsistent with the study recommendations by Yule (2019) access and utilization of knowledge and information by aquaculture farmers in Namibia, which found out that most farmers, are information literate and knew what to do when they are overloaded with information.

5.2.3 Challenges in seeking for information

Data from interviews indicated that farmers lacked computers, computer skills, and did not have money to order internet supplies or buy books. It was also reported that difficulty understanding information sources that were not written in their local language. Language is another situational barrier that can prevent free access to agricultural information.

5.2.4 Solution on how to improve information

The data presented in Chapter 4 revealed that farmers would like the Ministry of Education and the Ministry of Agriculture to play a leading role in providing agricultural information. They stated that they would appreciate it if they had a monthly budget to buy books and that agricultural colleges would open their libraries to farmers. Farmers expressed that before agricultural students graduate, they must be assisted to build their own library and agricultural colleges should set up a system to update agricultural information sources for farmers.

5.3 Summary of the findings

This section consists of the summaries of the findings of the study on the access and use of agricultural information by farmers of Etunda irrigation project. According to Matsveru (2013) in the final chapter, the main conclusions of the report (Chapter 4) is clearly and succinctly summarised. The aim of this investigation was to answer the question: “how the farmer of Etunda irrigation access and use agricultural information in their farm?” With the many challenges of farmers being illiterate and other challenges, farmers need access to up-to-date, reliable, and relevant agricultural information.

The data collected from some farmers of Etunda irrigation is assumed representative of all farmers in Etunda. The great significance is that the study has provided answers to questions relating to the access of agricultural information by farmers. The research has also provided information on the use of agricultural information and the sources they use. All this information is important for the improvement of agricultural information in Etunda.

The summary of findings is presented based on the following parts:

- Information need
- Information seeking behaviour
- Information literacy
- Benefit of information
- Challenges in seeking for information
- Solution on how to improve information

5.3.1 Information need

Farmers in Etunda need authentic agricultural information to boost the business output, promoting sustainable farming and to make optimum use of their land for farming.

5.3.2 Information seeking behavior

Farmers use formal sources of information such as agricultural books, books on farming history, books that are in line with their farming. When they fail to find agricultural information in formal sources, they turn to informal sources such as experienced farmers, pray to God the almighty and sometimes go to other farming projects to look for relevant information. They also use farming writings of their founders, radio and televisions.

5.3.3 Information literacy

Most of the farmers in the project did not attend school and this shows that they are illiterate. Farmers are unable to find relevant information for farming even when they visit the library because they are struggling with reading. They have indicated that only the farm manager is more literate than other farmers in the project. There is also a language barrier between some of the farmers and this is a clear indication that most of the farmers are illiterate.

5.3.4 Benefits of information

The farmer's benefits from using the right information on agriculture because they have indicated that they do not feel knowledgeable when they are farming without using information. They have also indicated that the use of agricultural information is very important when farming because it can lead to the production of more agricultural products.

5.3.5 Challenges in seeking for information

The study found out that data sources are expensive; the data is not available in nearby languages; and lots of farmers don't have any get entry to the Internet or computers. farmers commonly locate

it tough to ask other farmers for data. Other elements consist of unavailability of precise agricultural books, data overload, loss of abilities to assess authenticity of data at the Internet, unavailability of commentaries on a few farming books, loss of agricultural libraries, loss of applicable and contextual data and absence of budget to shop for the needed data resources.

5.3.6 Solution on how to improve information

Based at the interviews data, farmers need to look at the nearby farms and the agriculture colleges from in which they skilled is being concerned in their agricultural information. The farm manager indicated that schooling became an on-going factor that is going past graduation. While the farm takes the financial responsibility, the agricultural institutions, when you consider that they're already concerned in the schooling of farmers, ought to set up ordinary workshops for farmers. The consensus became additionally that given this age of technology, farmers ought to report their very own teachings in nearby languages and hold them for destiny use. The messages also can be exceeded to different farmers of the same farm speaking the same language.

5.4 Conclusions

The section is organised according to the objectives:

5.4.1 To establish the information needs and information seeking behaviour of Etunda farmers

The most important issues that the farmers want information on are: growing crops, the amount of fertilizers and water needed and controlling pests. The nature of the information seeking of farmers on this study varied relying at the obligations that the farmers turned into wearing out.

5.4.2 To determine the information literacy levels of the farmers

Information literacy of farmers is very poor, as they have indicated that more they do not rely on any source of information when doing their farming duties. The study also shows that farmers need authentic agricultural information.

5.4.3 To find out challenges the farmers meet in seeking for information

Farmers' traditional perspectives on farming have an impact on how they seek information.

Etunda farmers suffer social and financial obstacles that prevent them from accessing information, such as a lack of funds for computers, newspapers, or the Internet. Another element affecting farmers' information-seeking behaviour is their inability to ask others for help. Some farmers were employed in the areas they may now be no longer certified to deal with. However, it could be concluded that farmers do not have enough reliable, updated, and applicable agricultural facts for the responsibilities that they perform.

5.4.4 To recommend solutions on how to improve information literacy amongst the farmers

The finding shows that majority of the farmers only use the traditional way of farming because they do not have access to electronics that can allow them to access modern agricultural information and the researcher recommends that in order to provide information literacy to farmers, the Ministry of Agriculture, Water and Forestry should collaborate with other ministries like the Ministry of Information and Communication Technologies and the Ministry of Education through the directorate of Namibia Library and Archives Services (NLAS) and come up with a library in the areas of Etunda Project. Through the Namibia Library and Archives Services (NLAS) directorate, the Ministries of Agriculture, water and forest and Ministry of Education and Culture should work together to train farmers in information literacy.

This training should cover topics like retrieving information about agriculture from online databases and the Internet, evaluating information sources, and using information to meet their daily information needs. Farmers can learn about ICTs at workshops. Farmers will learn how to use ICTs as well as how to assess the legitimacy and dependability of websites. The researcher suggests that crop farmers and agricultural colleges collaborate to create collection development guidelines that will specify the scope of the collection as well as the depth of information coverage in order to achieve consistency in the construction of an agricultural information collection. This enables the farmers to concentrate on particular area as opposed to gathering all agricultural data that comes their way.

The findings also show that some of the farmers are unable to read and understand English. Repackaging English information sources into local languages like Oshiwambo, Otjiherero etc. is something the researcher advises). The information might also be repackaged as drama, storytelling, or music, for instance. The duty of repackaging and translating these sources into formats that farmers can use could be given to agricultural universities. Some farmer also indicated that they do not have knowledge on how to operate a computer to access information.

The researcher believes that if the aforementioned recommendations are effectively put into practice, Etunda project farmers would be able to use agricultural information to its fullest potential.

5.6 Areas for further research

The research on the “Access and use of agricultural information by farmers of Etunda irrigation project” is the first in Namibia. During this study, a number of issues emerged that required further investigation of agricultural information services in Etunda. Further research on agricultural information services in Etunda should focus on:

- ❖ Access and use of agricultural information by animal farmers in Namibia.
- ❖ The role of ICT in increasing agricultural information services.
- ❖ The role of agricultural information to the success of Etunda irrigation project.

5.7 Final conclusion

This study on Etunda Irrigation Project farmers' access to and use of agricultural knowledge showed that Etunda farmers needed information on various topics that could help them maintain and develop their farms. The survey found that farmers used pieces of information and needed that information to support their crop production practices. The study also showed that most farmers used ICT to access information, although they faced challenges. Such as low level of ICT skills, low information literacy, poor understanding of the subject and information scattered sources in different libraries and lack of information due to lack of skills to use information on the Internet. The study added information to the field of agriculture and information use, which opens discussion and is a reference point for further studies.

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APPENDICES

APPENDIX A: LETTER OF PERMISSION

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Department of Information and
Communication Studies

21 June 2022

To Whom It May Concern

Re: Request for Permission to Conduct Research

We wish to introduce to you Mr Tomas Erastus, a fourth year student conducting research in partial fulfilment of the B.A. in Library and Information Science (Hons). His research project is titled “Access and use of agricultural information by the farmers of Etunda Irrigation Project”. Please find attached the research proposal.

We are requesting your assistance by granting the student permission to conduct the study on your Project. We rely on the support of our stakeholders for the success of our programmes. His contact details are erastustomas98@gmail.com

Thank you in advance for your support.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'C. Nengomasha', written in a cursive style.

Prof C.T. Nengomasha

Supervisor, Department of Information and Communication Studies

Cell: 0812787617; Office: 2063641; email: cnengomasha@unam.na

APPENDIX B: DATA COLLECTION INSTRUMENT

INTERVIEW GUIDE FOR THE FARMERS (*in English*)

1. GENERAL INFORMATION

1.1 What is your job position in the farm?

1.2 How long have you been working in farms?

2. INFORMATION NEED

2.1 Do you do research when preparing for farming?

2.2 What information do you look for?

2.2 What information do you lack?

3. INFORMATION SEEKING BEHAVIOUR

3.1 How frequently do you look for agricultural information?

3.2 What do you do when you lack agricultural information?

3.3 Where do you access agricultural information from?

4. INFORMATION LITERACY

4.1 Have you ever heard of agricultural information before?

4.2 When you need information for farming which sources do you consult first?

4.3 Do you share information about your work in a meeting or conferences?

5. BENEFITS OF INFORMATION

5.1 Do you feel knowledgeable about your work without using information?

5.2 Do you feel satisfied after using information to complete your task?

5.3 What information do you use when carrying out your tasks?

6. CHALLENGES IN SEEKING FOR INFORMATION

6.1 Do you know how to use computers and other electronic devices?

6.2 What problems do you have when you want to get information for your farming duties?

6.3 What encourage or discourage you when seeking for information for farming?

7. SOLUTION ON HOW TO IMPROVE INFORMATION

7.1 How can access to agricultural information be improved?

7.2 What assistance will be desirable for you to access and use the best agricultural information to play your roles?

INTERVIEW GUIDE FOR THE FARMERS (*in Oshiwambo*)

1. OUYELELE WOPETAMEKO

1.1 Oholongo shike mofaalama?

1.2 Mofaalama owalongelamo efimbo lifike peni?

2. OUYELELE WAPUMBIWA

2.1 Ohamu kaninga omapekaapeko nge mwahala ouyelele.

2.2 Ouyelele ulipi hamu ka kongu.

2.3 Ouyelele ulipi mwapumbwa

3. OMIKALO DOKUKONGA OUYELELE

3.1 Ouyelele ohamuukongo efimbo lifike peni?

3.2 Ohamu ningipo shike nge mwahala ouyelele wounamapya nounaimuna?

3.3 Ouyelele wounamapya nounaimuna ohamuuhange peni?

4. OUYELELE WOPETAMEKO

4.1 Owa udasha nale kombinga youyelele wounamapya nounaimuna?

4.2 Nge wahala ouyelele wounamapya ohoukongo komandiki omauyelele elipi?

4.3 Ohamulipe omauyelele ngeenge muli pomangudumano ile poiHongi?

5. UUWANAWA WOMAUYELELE

5.1 Ohashi kala shipu nge tamulongo oilonga yeni kapena ouyelele?

5.2 Ohamu wanenwa ngah kouyelele ou mwamonapo?

5.3 Ouyelele ulipi hamulongifa nge tamu longo oilonga yeni?

6. OMAINDA MOKUKONGA OUYELELE

6.1 Omu shii yoo tuu okulongifa omandiki omakwatafano okomalungula?

6.2 Opena sha hashi mukeelele nge tamu kongo ouyelele kombinga yoku faalama?

6.3 Oshike hashi muimbi nenge hashi handje omukumo nge tamu kongo ouyelele?

7. EKANDULEPO KOMBINGA YOKUMONA OMAUYELELE

7.1 Ouna shimwe wahala shiningwe kombinga ye tukulafano louyelele?

7.2 Oshike mwahala shaningwapo opo mukale tamu pewa ouyelele wawana kombinga younamapya nounaimuna?

APPENDIX C: CONSENT FORM

Title of the research project: “Access and use of agricultural information by farmers of Etunda Irrigation project”

Researcher: Tomas Erastus N

Student number: 218205246

Cellphone: 0818029524

: erastustomas98@gmail.com

Supervisor: Prof. C. T. Nengomasha

University of Namibia, Department of Information and Communication Studies

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Information

This research aims to investigate the access and use of agricultural information by farmers of Etunda irrigation project. All the information collected as part of this study will be kept confidential. No name will be published in the write up of the findings and confidentiality and anonymity will be adhered to at all times. Your records will be kept confidential and will not be released without your consent.

This study is important as it will benefit the project in terms of accessing and using of agricultural information by farmers of Etunda. It may identify the strengths, weaknesses and come up with recommendations on how to access and use agricultural information.

For further queries and clarifications do not hesitate to contact me or my supervisor. Contact details are provided above.

Participation is voluntary, and you may choose not to participate or withdraw from participation at any time. I however appeal to you to help in the success of this research through your participation.

If you voluntarily agree to participate in this research, kindly indicate your consent by signing below.

Do you agree to be digitally recorded? YES NO

Signature

Date
