

**THE ROLE OF INFORMATION AND COMMUNICATION
TECHNOLOGIES (ICTS) IN PROFESSIONAL WOMEN'S ACCESS TO
DEVELOPMENT INFORMATION IN ZAMBIA**

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ABSTRACT

Background: Information and Communication Technologies (ICTs) have the potential to meet the development information needs of individuals particularly women. Even though much has been documented about gender and ICTs, few studies have been conducted to closely examine the link between ICTs, women and development information.

Objective: To investigate whether professional women in Lusaka, Zambia use ICTs to access development information.

Methods: This study, largely quantitative in nature was conducted in Lusaka, Zambia. Ten (10) private and ten (10) public sector institutions were purposely selected. A minimum sample of 200 professional women from these institutions was randomly selected. A questionnaire survey was used to gather primary data.

Results: The results from the field reveal that the majority of the respondents have access to ICTs such as radio (99.5%), television (100%), computers (79.5%), Internet (65.5%), land phone (82.5%) and mobile phone (96.5%). Even though the findings reveal that professional women use these ICTs to access development information, the majority of the respondents (25%) use the radio to listen to news, television to watch the news also (18%), Internet for e-mail purposes (17%), Computer for working purposes (20%), landline phone (20%) and mobile phone (22.5%) for emergency purposes. The types of development information accessed using the ICTs include information on health, education, agriculture, gender issues, good governance, environment and water and sanitation. This information is mainly accessed in English. The main barriers professional women face to access and use ICTs include high costs of equipment, maintenance and connectivity (26%); limited knowledge and skills (22%); inadequate time (16.5%); limited connectivity (15.5%); lack of relevant content (9%); language barrier (4.5%); distance (4.5%) and marginalisation (2%).

Results from the field further reveal that professional women use other sources to access development information such as print newspapers, libraries or information

centres, families and friends, women's groups and church. The findings have also revealed that the majority of the respondents recognize the importance for them to have access to ICTs and development information.

Conclusions: From the findings, it is clear that ICTs have the potential to meet the development information needs of women. Thus women should take advantage of these technologies and use them to access information and knowledge in all aspects of development to increase their productivity, efficiency and incomes.

DEDICATION

To my father, Ospensio Mulauzi and my mother, Akwilina Miti, whose interest in my education has never ceased to inspire me. For their prayers, encouragement, support, patience and understanding during my absence.

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CHAPTER 1: INTRODUCTION

1.1 Statement of the problem

This study, largely quantitative in nature involved a survey on the role of Information and Communication Technologies (ICTs) in professional women's access to development information in Lusaka, Zambia. Today, the potential of ICTs to meet the information needs of individuals particularly women cannot be overemphasised. ICTs have the potential to empower individuals particularly women in new ways by providing them with unique as well as direct access to information (Villa, 2002) and communication.

Information and communication are not only power (Dua, 1994) but also an indispensable resource for economic, social, political and cultural development, (Karelse and Sylla, 2000). It leads to resources including opportunities that generate resources, (Huyer, 2004). Information is the prerequisite for society and indeed individuals to make informed social, political and economic decisions and actions at all levels of time and space: individual, institutional, national and global levels. In fact, information has the potential to fight the three enemies of development: poverty, disease and ignorance. ICTs in as far as access to information and communication is concerned are a tremendous force to reckon with today in this area.

Thus access to information is critical for women who not only form the majority of the population in many regions but are also key player in the development process. According to Olorunda (2004), women form the foundation of any society for they determine in one way or the other what individuals or society or race turn out to be. Thus society's ability to develop veritably depends on the ability of individuals particularly women to access information and knowledge. Opoku-Mensah (2000) maintains that information and access to ICTs are no loner a luxury but a human need and a basic human right. In fact, the Declaration of Human Rights declares access to information as a universal human right. The declaration reads in part:

“Everyone has the right to seek, receive and impart information and ideas through any media and regardless of frontiers,” (United Nations, 2005a).

Furthermore, access to information, according to Ochieng is a prerequisite for human empowerment for it is critical in the attainment of socio-economic and political development including democracy and human rights. However, Primo (2001) claims that women’s access to information is a major global concern and the third major problem facing women globally after poverty and violence against women. Women, particularly in underdeveloped countries, face the problem of limited access to relevant information in the economic field on a continuous basis about health, education, food production and processing, (Huyer, 1999) thereby removing them from the information age, (United Nations, 2005b). ICTs have the potential to address women’s information imbalance, (Rathgeber and a, 2000).

For this reason, Momo (2000), urges women in today’s information age not lose sight of who has access to information and miss the chance to create, use and access information to improve their lives and participate in the economic, political and social life of their communities and countries at large. She claims that in most cases women are not aware of the services available to them. Nor are they aware that ICTs can considerably widen their access to information to improve their quality of life and contribute effectively to sustainable socio-economic development. A further claim is made by Munyua (2000) who maintains that women do not know where to find and do not understand the impact of the information, they are unable to identify the information environment including the type of information needed, how to access it and whether it is gender sensitive, (Karelse and Sylla, 2000). Thus, Hafkin and Taggart (2001) suggest that it is imperative to ensure that women understand the significance of ICTs so that they may use them effectively to access relevant information.

Failure for women to participate in the information and ICT revolution may continue to widen the gap between the ‘information have’ and ‘information have not’. There is also a danger for women to continue to lag behind in the development process, (Marcelle, 2000). However, Dasgupta (2001) observed that the need for information and access to information for women have not been taken as a serious issue. On the

other hand, Huyer (1997, 2004) observed that access to information is not enough. There is need to examine: (i) the kind of information women access and need and the means through which they access that kind of information. Is it developmental? Is it non developmental, inconsequential or destructive information?; and (ii) the information technology available to women and their impact on women. A number of studies have been conducted on the relationship between gender and ICTs. However, there are seldom any empirical studies on the linkage between ICTs, women and development information including the kinds of information women access using ICTs. It is against this background that it was imperative to closely examine the role of ICTs in women's access to development information in Lusaka, Zambia.

1.2 Research Aims and Objectives

Aim

It was the aim of this study to investigate whether professional women use ICTs to access development information in Lusaka, Zambia.

Objectives

General Objective

The general objective of the study was to investigate if professional women use ICTs to access development information in Lusaka, Zambia

Specific Objectives

- ✓ To investigate if professional women have access to ICTs in Zambia
- ✓ To investigate if professional women in Lusaka, Zambia have access to development information
- ✓ To investigate the kinds of development information professional women in Lusaka, Zambia access using different kinds of ICTs.
- ✓ To investigate the language in which professional women access development information in Lusaka, Zambia using ICTs
- ✓ To investigate the main barriers to professional women's access and use of ICTs in Lusaka, Zambia to access development information.

1.3 Research Questions and Hypotheses

Research Questions

- ✓ Do professional women in Lusaka, Zambia have access to ICTs?
- ✓ Do professional women in Lusaka, Zambia have access to development information?
- ✓ What kinds of development information do professional women in Lusaka, Zambia access using different ICTs?
- ✓ In what language do professional women in Lusaka, Zambia access development information using ICTs?
- ✓ What barriers do professional women in Lusaka, Zambia face to access development information in using ICTs?

Hypotheses

H1 Professional women in Lusaka, Zambia have access to ICTs

H2 Professional women in Lusaka, Zambia have access to development information

H3 Professional women in Lusaka, Zambia use ICTs such as radio, television, computer, Internet, land phone and mobile phone to access information on health, education, agriculture, environment, gender issues, good governance, water and sanitation.

H4 Professional women in Lusaka, Zambia access development information in English

H5 Professional women in Lusaka, Zambia have barriers to relevant content; language that include ICT connectivity; costs of equipment, maintenance and connectivity; knowledge and skills; distance; marginalization by gender; and time.

1.4 Background of the problem

Without information, individuals can neither act nor make well informed decisions affecting their lives and that of society at large, (Ochieng, 1999). Without relevant information, individuals cannot perform well (Rasmussen, 2001) and a nation cannot successfully achieve sustainable and equitable development. Information results in an informed citizenry. It also provides knowledge for development of the nation, (Adamu, 2002 and Republic of Zambia, 2005).

Knowledge empowers an individual to form his or her own opinion, to act and transform conditions which assail him and thus lead to better quality decisions. It is thus important [to] expose citizens to adequate sources of information to enable them take rational decisions, both politically and economically, "(Adamu, 2002:1).

As a means of promoting sustainable development in any nation, access to information is thus critical for finding solutions to problems facing women in the information age. ICTs have the potential to contribute towards enabling women to access information of importance such as information on health, education, agriculture, good governance, gender issues, environment water, sanitation, poverty as well as information important to their community roles and to obtain additional resources, (United Nations, 2005b). They have the potential to not only enable women access to information but also knowledge and skills that promote their social, economic, political and cultural empowerment thereby benefiting communities and societies at large, (AIT Global, 2006).

"The capacity to acquire and communicate knowledge is the foundation of development. If development depends on empowering people and communities to take control of their lives, access to information through improved communication is an essential component of growth," (Morna and Khan, 2000: 2)

Information can now be generated, processed, accessed, used, acquired, retrieved, transmitted and disseminated across the global with greater speed than ever before with ICTs. In addition, ICTs have made it much easier and cheaper to disseminate, access, share, exchange and communicate information. Currently, distance and time are no longer obstacles. Hill (2001:8) states that today, “information needs no passport to cross national borders.” This is to suggest the ease with which information can be accessed, shared, disseminated and communicated from all corners of the world. Subsequently, huge amounts of up to date and accurate information have become potentially available anywhere at any time to anyone.

ICTs are global in nature and their pervasiveness has the potential to transform all sectors of the economy (Burns, 1998), resulting in a global consensus to harness ICTs as effective tools for sustainable and equitable social and economic empowerment especially for women, (ITU, 2005,) including poverty alleviation, (McNamara, 2003 and Greenberg, 2005). The global consensus is particularly manifested from the two World Summits for Information Society (WSIS) which took place in 2003 and 2005 in Geneva, Switzerland and Tuni , Tunisia respectively. The result of the first phase of the summit was the Declaration of Principles and the Plan of Action. The Declaration of Principles affirms the potential of ICTs to empower women and the underprivileged through provision and access to development information. The Declaration of Principles reads in part as follows:

“We affirm that development of ICTs provides enormous opportunities for women, who should be an integral part of, and key actors, in the Information Society. We are committed to ensuring that the Information Society enables women’s empowerment and their full participation on the basis of equality in all spheres of society and in all decision-making processes. To this end, we should mainstream a gender equality perspective and use ICTs as a tool to this end,” (International Telecommunications Union, 2005:11).

Similarly, at a national level, the Zambian government, in its national ICT policy acknowledges the importance of ICTs to empower individuals, accelerate the social and economic growth and reduce poverty as follows:

“...ICT is one of the enablers to building a people-centred, inclusive and development oriented information society, where everyone can create, access, utilise and share information and knowledge by enabling individuals...to achieve full potential in achieving sustainable social and economic growth-a precondition for poverty reduction thereby improving the quality of people’s lives,” (Republic of Zambia, 2005: 1).

Moreover, ICTs potentials and capabilities to contribute to the realization of the Millennium Development Goals (MDGs), namely: eradication of extreme poverty and hunger; achievement of universal primary education; promotion of gender equality and empowerment of women; reduction of child mortality; improvement of maternal health; to combat HIV/AIDS, malaria and other diseases; ensuring environmental sustainability; and development of global partnerships for development for the attainment of a more peaceful, just and prosperous world have been widely recognised, (ITU, 2005, Republic of Zambia, 2005).

In this regard, women across the globe are being encouraged to seize the information and knowledge society to access information including knowledge critical to their lives, their well-being and their effective participation in the social, political and economic development of their societies. However, questions still arise as to whether professional women not only in Zambia but also many other regions use ICTs to access information crucial for development and their empowerment. It was imperative therefore, in this study to investigate the role of ICTs in women’s access to development information in Lusaka, Zambia.

1.5 Significance of the study

While much has been written about gender and ICTs and the potential gains that may accrue to women through the use of these ICTs, incredibly few researches, if any have been carried out on the link between ICTs, women and development information not only in Zambia but also in many parts of the world. Therefore, one can arguably conclude that there has not been sufficient awareness on the importance

of ICTs as tools potential to meet the development information needs of women. This is evident from claims by Munyua (2000) that women are not only unaware of where to find information but also do not understand the significance and potential impact of the information revolution. They have problems in identifying the information they need and how to access it and if it is gender sensitive, (Karelse and Sylla, 2000). This study therefore, is intended to make a slight contribution in raising awareness on the significance of ICTs and their potential to meet the development information needs of women. This in turn will promote women's increased access and use of ICTs to access vital information.

In today's society, access to information and knowledge is critical. However, the ITU (2005) argues that access to information and knowledge can be promoted by increasing awareness among all stakeholders. Nonetheless, it is also the intention of this study to raise awareness and understanding among women and other stakeholders of the importance of accessing information and knowledge about health, education, agriculture, environment, good governance, and water and sanitation among other things.

As observed by Yumba (2002) and Mchombu (2003) even though information is recognized as an indispensable resource for the social and economic development of less developed countries, its value has not yet been recognized in many developing countries. The low status accorded to information results in little or lack of appreciation of its value and potential for national development. Consequently, this study makes a slight contribution in raising awareness on the significant role and value of efficient and effective use of information in sustainable socio-economic development of the nation.

Furthermore, this study is intended to raise awareness on the information needs of women and in turn assist the government and other stakeholders in initiating developmental programmes that meet the information needs of women. In general, the study also contributes to the already existing body of knowledge.

Moreover, the study is intended to raise awareness among policy makers and other stakeholders of the need to design appropriate information and communication

technologies that would enhance women's abilities to access information and knowledge to create greater empowerment opportunities for them. It is further, intended to raise awareness among policy makers and other stakeholders of the need and significance of providing more development oriented programmes targeted at women so that they can effectively contribute to the development process.

The recommendations of the study might also aid in stimulating further action at policy level and consider how best ICTs and other stakeholders can support the empowerment of women and delivery of development information. The results of the study can also be used by other researchers for further studies on the linkage between ICTs, gender and development information.

Finally, it is imperative to mention that this study was undertaken in partial fulfilment of the researcher's pursuits towards the attainment of Master of Science in Information Management. Therefore, it was also intended to enable the researcher acquire the relevant practical skills and experiences that are needed in conducting research.

1.6 Theoretical Framework

According to the Australian Agency for International Development (AusAID) (1997), early approaches to women in development recognised that development had overlooked the significant role played by women in the development process, hence largely excluded them from the design and implementation of development programs. However, it was only in the 1970's that the integration of women into the development process began to be seriously considered after the publication of Esther Boserup's book called *Women's role in Economic Development*. Boserup, an early Western feminist analysed the sexual division of labour and its relation to the negative impact of development strategies on women in the Third World. Results of Boserup's analysis revealed that women play a critical role as producers in agriculture (Peet and Hartwick, 1999). Yet several development strategies largely overlooked women leading to their lack of control over new technologies. These were mainly placed under the control of men thereby improving their opportunities and technological knowledge while women had limited access to technological

knowledge and employment. This led to the marginalisation of women and their status, power and incomes being reduced, (Ibid). Women's economic opportunities and autonomy were undermined. Thus Boserup disputed the assumption that benefits from development projects would automatically "trickle down" to women and other disadvantaged groups in Third World nations, (Connelly et al., 1999). Consequently, the Women in development approach emerged.

Women in Development (WID)

The Women in Development (WID) approach emerged in the 1970's after the realisation of the need to integrate women in the development process. With exclusive focus on women, the approach argued that women who comprised half of the world's productive resources were excluded from many development plans and policies and indeed from the mainstream of development. Therefore, there was need to advocate for more efficient and effective development that incorporated women by integrating them into the existing development process, (Parpart et al., 2000). In order to realise this goal, WID focussed on increasing women's productivity and ability to look after the household and on women's projects, projects that had a component on women and projects that incorporated women into their national economies to improve their status and assist in the development effort. Such income generating projects included small scale projects such as those facilitated by the International agencies like Oxfam, USAID, CIDA and numerous other economically viable projects beneficial to women ranging from microfinance business training to water and sanitation, health and education, (Bhavnani, 2003). However, Wakunuma (2007), in her unpublished thesis argues that such projects did not benefit the majority of women since they were local other than national programs. Where such programs were localised, again few women participated they were conducted through clubs of which not every woman was a member. This resulted in some form of elitism between those who took part in the projects and those who did not take part. The projects also meant some form of isolation other than integration of women into the process of development because they were carried out outside the mainstream development policy, (Ibid).

Since the approach also focussed on addressing the practical needs of women such as income, health, food, housing, safety and children, there was very little consideration on how these projects were to respond to women's more strategic needs (Hafkin, 2002) such as subordination, vulnerability to poverty, violence; and lack of productive resources, information and education. Hence, these projects had limited impact on changing the conditions and position of women especially in less developed countries, (Ibid). Additionally, emphasis of WID on a home, family and social welfare approach resulted in women being perceived as passive recipients of the benefits of development, (Hafkins, 2000). Furthermore, although WID approach supported income generating activities for women, it neither provided strategies to lessen women's household tasks nor improve women's reproductive technologies. The approach did not take into account the ideological aspects of gender, unequal responsibilities between women and men including the unequal value placed on women's and men's activities, (Peet and Hartwick, 1999). As the main focus was on increasing the productive capacity of women, WID overlooked the influences of class, race or culture on women.

Moreover, WID approach also focussed exclusively on women other than gender relations and poverty not oppression. Therefore, it did not question women's subordination as part of the wider global system of capital accumulation, (Ibid). Albeit slight changes in women's status were observed due to income generating activities targeted at them, women remained marginalised from the mainstream processes of development. Thus there were calls for changes in the socially embedded inequities between women and men. It was argued that these inequities were structured into institutions that represent patriarchal, hegemonic interests. Hence there was need to bring men into the analysis, not set out apart from it, (Hafkin, 2002). Therefore, gender was considered as an important aspect if women were to be brought on board in development process. Feminists and development theorists started to look for new development paradigms to complement the WID approach. Thus the Gender and Development (GAD), also as the empowerment approach emerged.

Gender and Development (GAD)

Thus unlike WID whose focus was on women only, GAD focussed on understanding the socially constructed relationships between women and men particularly on women's subordinate positions. This kind of policy mainstreaming of gender, according to Waylen (1996) demonstrates the interconnection of relations between men and women which might otherwise be lost if women alone were to be a focus. Such a focus on gender helps to promote an understanding of how inequalities are continually being replicated and reinforced. Thus "an approach to development that accepts and understands differences women and men and the power of discourse, and that foster consultative dialogue can empower women in the South to articulate their own needs and agendas," (Marchand and Parpart, 1995: 19).

Furthermore, the approach argued that women were not a homogenous group. Nevertheless they were divided by class, race and beliefs. Thus the roles of women in society could not be looked at as autonomous from gender relations. There was need to examine the structures and processes that give rise to women's disadvantaged position. "Disadvantage came from the globally pervasive ideology of male superiority: men had power and control over women", (Peet and Hartwick, 1999: 187). Thus the material conditions and women's position in the national, regional and global economies including the nature of patriarchal power in their societies at national, community and household levels are seen as major influences on the status of women in society. The inequitable distribution of resources, opportunities, activities and benefits within society and its institutions, including the family, the market and the government and its public services was largely seen as the cause for women's exclusion in development.

Therefore, empowering women and other vulnerable people including women's involvement in decision making bodies and transforming the unequal relations according to GAD would facilitate equitable and sustainable development. To empower the disadvantaged and women and to transform unequal relations, there was need to: (i) re-conceptualise the process of development taking into account gender and global inequalities; (ii) identify and address not only the practical needs of both women and men (i.e. food, housing, income, health, children and safety) but

also the strategic interests (i.e. Subordination, lack of resources and education, vulnerability to poverty and violence) of both poor women and men through people centred development, (Ibid).

Women were not only recognised as recipients but also as agents of development and in consequence, GAD questioned both gender and the processes of development because development policies and practices were viewed as impacting differently between men and women. Thus technologies came to be viewed as being gender neutral and that their use should be made available to both women and men, (Hafkin, 2000). Gender differences came to be viewed as arising from the ways that women and men are differently positioned in as far as technology is concerned. In addition, women were considered to have equal ability with men to create and use technologies but due to gendered roles, women tend to assume (less technological) domestic roles (as housewives and mothers) thereby distancing themselves from tech-savvy.

Today, the focus of GAD according to AusAID (1997) is on gender equality. Wakunuma (2007) suggests that one way to achieve gender equality for sustained development is to provide access to women those resources which have always been available to men.

Hybrid of development approaches

For the purpose of this study and the context in which ICTs can be used to address Continued exclusion in the development process, it is relevant to mention that women's integration in the development process can be achieved by addressing both practical i.e. immediate; and strategic i.e. long term needs of women. One way of addressing these needs is through access to development information ICTs provides. Women's access to development information would enable them make informed decision making, increase their productivity and efficiency, generate income and participate effectively in the whole process of development. This is the reason why the two approaches, that is, WID which attempts to address the practical needs of women has been combining with GAD which attempts to address the strategic needs in an effort to incorporate them in the development process.

Technologies, such as ICTs can be embraced as one of the means to address both the practical and strategic needs for women. This is so because information touches on virtually all aspects of women's need and through ICTs relevant, accurate and timely information including knowledge can be accessed to address women's practical and strategic challenges and ensure that they participate in the development of their societies.

1.7 Scope of the study

This study covers both traditional and modern ICTs. Because a complete range of ICTs is very broad, only six types of ICTs are covered in this study namely; computers, Internet, Mobile (new ICTs) and fixed line telephony, Television and radio (old ICTs). As observed by the Women's Net (2004), though much emphasis is often placed on the new ICTs, Africa requires a broad ICT toolkit for development that incorporates both new and old ICTs that can be exploit in diverse blends pertinent to the requirements and situations of particular communities and groups. In fact, McNamara (2003: 20) observed that the exclusive focus on newer ICTs other than older ICTs in recent development discourse tends to obscure the value of older ICTs as indispensable tools for development "which, in many cases, is more appropriate, affordable, and adaptable to local needs than the newer ICTs."

Both the old and new ICTs are quite popular in Zambia especially in the city of Lusaka where the necessary ingredients of infrastructure, finance, government services and skilled workers are more heavily concentrated. Yet very little is known about ICT initiatives and their impact on women, the link between ICTs women and development information including any attempts of policy makers to implement ICT initiatives.

There are miscellaneous kinds of information one can access through the use of ICTs ranging from developmental to, traditional, personal (Dasgupta, 2001) to non developmental, inconsequential and destructive information. Thus the kind of development information covered in this study includes health, education, agriculture, environment, good governance, water and sanitation, and gender issues.

1.8 Definition of key terms

Development

In this study, development is taken to mean “a comprehensive economic, social, cultural and political process, which aims at the constant improvement of the wellbeing of the entire population and of all individuals on the basis of their active, free, and meaningful participation in development and in the fair distribution of benefits resulting therefrom, (Fors & Moreno, 2001).

Information

The term information in this study is taken to mean “intelligence and knowledge that contributes to the social, economic, cultural and political well being of society...,” (Lundu, (1996: 11).

Development information

This study has used the terms ‘development information’ and ‘development oriented information’ to refer to information that is required or used for or in development. Such information includes among other things information on health, education, agriculture, good governance, freedom, human rights, environment, water and sanitation and gender issues. “It derives from the attempt of people to build up and create a better environment for them,” (Olorunda, 2004:3).

ICTs

There is no agreed definition for ICTs. For the purposes of this study, ICTs are taken to include the full range of electronic technologies and techniques used to generate, process, access, store and communicate information. These encompass the old ICTs such as radio, television and telephone and the new ICTs such as computers, mobile

telephony, satellite and wireless technology and the Internet, (United Nations ICT Task Force, 2003).

Access

Access in this study refer to the capability to physically ingress and use technology as well as being able to make use of the information and knowledge it offers, (Primo, 2001, UN, 2005c).

Organisation of the dissertation

This study consists of five chapters. The first chapter provides a background of the study including the problem situation, situation analysis of Zambia, the significance of undertaking this study, aims and objectives, research questions and hypotheses. In addition, two major feminist theories of development: Women in Development (WID) and Gender and Development (GAD) including the scope of the study and the definitions of key terms are presented under chapter one.

A critical survey of selected, relevant and appropriate reading was undertaken in order to relate the proposed study to previous work. The results of the survey of literature are presented in chapter two. Chapter three provides a description of the steps that were taken to address the research questions and test the hypotheses, including the research paradigm, methodology, methods, techniques and instruments. The research findings and discussions of the study are presented in chapter four. Chapter five presents the summary, conclusions and suggestions for future research.

CHAPTER 2: LITERATURE REVIEW

2.1 The role of information in development

The critical role information plays in all aspects of development has been highlighted in a number of studies. To begin with, Yumba (2002) argues that information is one of the critical resources required for development to take place. Consequently, information and data are requisite in every development attempt for it enables the planners to not only choose superlative alternatives in a given environment but also resolve doubts in the process of decision-making and problem solving. In addition, adequate, timely and accurate information enables decision makers and planners to plan, allocate and utilise all types of resources effectively.

Thus to Fors and Moreno (2001), information and knowledge are basic resources in themselves. They are like food, air and other necessities of life because without them individuals cannot perform well (Rasmussen, 2001) and it is impossible for any sector or economic activity to function effectively, (Yumba, 2002). In fact, Mchombu (2003) claims information and knowledge are the most basic of all human basic needs because they have the power to solve the social and economic problems of any society. While Yumba (2002) contend that the power of information and its applicability in every human activity has turned out to be so decisive that economic resources such as land, labour and capital appear to be losing their value. Disputing this claim, Mchombu (2003) maintains that they are just new factors of production that are critical in human development just like the traditional factors of production namely; land, labour and capital, (Ibid).

According to Rasmussen (2001), the alleged crucial role of information in development is based upon: (i) prospective consumers of information are able to make realistic options based upon cost-benefit analysis or related coherent processes. This implies that information should enable users to critically examine issues and make informed choices, actions and decisions; (ii) ideal information is readily available. For information to have a desired impact, it must be right information

provided at the right time and in a desired form; and (iii) there is no cost involved to access information. Information must be available at almost no cost at all to all who need it. All these points fit well in today's ICT revolution which has enabled global pool of accurate, reliable and timely information and knowledge potentially available for anyone to access and use it rapidly and cheaply to make informed decisions and actions.

Furthermore, Yumba, (2002) claims that the role that information plays as an essential ingredient in the socio-economic development process of any society is now accepted by both developed and underdeveloped countries. Disputing this claim, Mchombu (2003) maintains that the potential value of information in underdeveloped countries has not yet been realised. Information is accorded a low status. Thus one of the reasons for underdevelopment in underdeveloped countries especially Africa is due to lack of reliable and timely information to support development planning, programming, implementation and evaluation of the plan. Decision making in these countries is based on very little or with no relevant and timely information resulting in inaccurate and wrong decisions including wastage of resources such as human and capital resources, (Yumba, 2002). "It is now a cliché to pronounce that Africa is the most underdeveloped continent in the world, where the majority lack access to development-oriented information," (Mchombu, 2003:111).

Acknowledging this fact, the Republic of Zambia (2005) points out that information is crucial for social and economic development because it results in an informed citizenry. Because developed countries are rich in information, their citizens are well informed about their social and economic environments. Societies that are well-versed adjust promptly to varying social and economic situations; and so can find opportunities to overcome developmental challenges such as poverty, (Ibid).

Rasmussen (2001) suggests the value of information should be seen in its use or by assessing its results after it has been applied. So for underdeveloped countries, the value of information should be assessed at large in its applicability to a diversity of problems faced by these countries including its impact on the goals and objectives, decisions and actions, intellectual equipment and overall skills people may gain applicable to the most critical problems rather than applying it directly to intended

activities. Thus, Rasmussen identified five aspects of development to which information can contribute to include: Social and democratic development; cultural enrichment; education and research; micro-economic development; and macro-economic development, (Ibid).

With that in mind, Kenney (1995) observed that information is often one of the missing links in some development strategies. He outlined the components of a development strategy to include: health, education and environment; good governance, freedom and respect for human rights; and wealth. This can be represented in diagrammatic form as shown below:

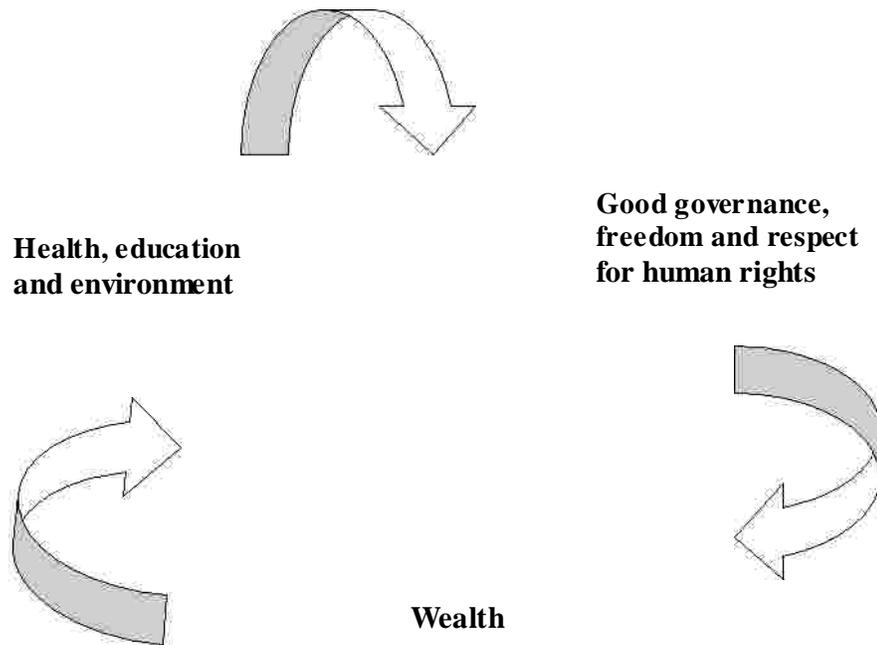


Figure 1: Based on Kenney (1995)

Health, Education and environment: Sustainable socio-economic development in any country according to Kenney (1995) requires a health and educated populace. Information plays a significant role in enabling individuals to learn on how to take preventive measures against diseases and improve their quality of life. As the old saying goes “prevention is better than cure,” (Bartle, 2007). Any economy requires huge sums of money when people get sick and have to be treated. Information results

in a healthy populace. It enhances the knowledge state of individuals about health matters. A healthy populace contributes effectively to poverty alleviation in terms of increase in productivity and wealth creation, disease prevention, access to safe drinking water, knowledge of proper disposal of wastes, hygiene and nutrition—“much more than clinics, doctors and drugs, which are mostly curative solutions than prevention against disease,” (Ibid). Being aware of potential health problems through information including access to basic social services significantly improves the health of individuals in society and indeed increases the economic productivity.

Similarly, information is critical in ensuring an educated populace in any society. It is a critical educational resource that facilitates understanding and learning of the social, cultural, political and economic environments. In addition, information enables individuals to gain knowledge of available options or opportunities and the risks involved in taking those options. Information and indeed education increases levels of economic productivity and enables individuals to gain knowledge, skills, self confidence and opportunities; lower the fertility reduce child and maternal mortality rates; increase life expectancies and incomes among other things. It is only through information that any nation can ensure a healthy and educated populace. In fact, the United Nations Economic Commission for Africa (UNECA) (1999: 2) clearly states that:

“Education and information have long been vital tools promoting health, controlling disease, raising the quality of life in communities and families...Information is life.”

Furthermore, human health presupposes a healthy social, physical and natural human environment. Information is an indispensable resource that raises awareness and changes people’s attitudes towards their environment. Information enables individuals to gain knowledge on how to effectively manage and conserve their natural resources, fight desertification and deforestation, avoid pollution and ensure the preservation of biodiversity among other things, (ITU, 2006a). It is only on the basis of health, education and environment that wealth would be created.

Good governance, freedom and respect for human rights: Sustainable socio-economic development goes hand in hand with good governance, freedom and respect for human rights. Good governance, according to Kenney (1995) implies the formulation of good policies including mobilization as well as the involvement of all stakeholders. Information between governance and the governed is an incentive. Therefore, information flow between the governance and the governed plays a critical role in facilitating equitable participation, involvement and mobilisation of all stakeholders. For instance, governance requires information as they design policies and plans, which should take into consideration the needs of the governed so that they can participate in the development process. Through information, the public is empowered to gradually take charge of and influence the running of their daily lives. Undesirable acts can be difficult to keep away from the public if there is proper information flow. "A better informed and better educated public is far less inclined to accept dictates from high that affects their day to day lives," (Kenney, 1995: 34).

Affirming the importance of information to social and democratic development, Rasmussen (2001), points out that information enables people to be well informed and therefore be able to influence decisions that shape the course of their lives. Access to information on civil, social and political rights enables individuals to participate effectively in the development of their societies, exercise their rights, and make critical judgements about civil, social, political aspects of the nation and its activities. It enables individuals to create a just and effective society for all to benefit.

Furthermore, good governance goes hand in hand with basic human freedom and rights. Ochieng (1999) explains that information is a crucial component of the right to freedom of expression, and necessary for the protection of all other human rights. It is also fundamental to the attainment of a democratic society and to the inherent dignity and development of every human being. According to Ochieng, without information, it is difficult to hold governments and individuals accountable for their actions. Consequently, they are able to commit violations with impunity. Such violations according to Ochieng, are common in most African societies and therefore could be indicators that majority of people especially the women lack this fundamental basic human right, (Ibid).

Wealth: Information and knowledge are some of the prerequisite for wealth creation, Republic of Zambia, 2005). For instance, information such as technical information, information about the available resources and the means to utilize them is critical in order for individuals to know how to create wealth, control the exploitation and make informed decisions.

2.2 Women's role in development

Women play a significant role in the development process in any society. They comprise more than half of human resources in many regions, (Reddock, 2000). Recognising and affirming women's importance in development, the Committee for Economic Development (CED) (2003: 2) states that:

“Nothing, arguably, is as important today in the political economy of development as an adequate recognition of the political, economic, and social participation and leadership of women.”

Nevertheless, women's actual and potential contribution to economic and social development is often undervalued and often not reflected in economic statistics in many developing regions. In addition, much of women's work remains unpaid yet they tend to work longer hours than men.

Specifically, women play three significant roles in society: productive, reproductive and socio-political roles, (Touwen, 1996). As producers of food, women according to ECD (2003) form the backbone of the world's agricultural labour force. They constitute the majority in food production. In fact, half of the food grown all over the world is produced by women. Thus women make up 67% and 70% of the agricultural labour force world wide and in developing world respectively. In Africa, women produce between 60-80% of food. While in Zambia they account for 70% of labour in agricultural production, (Civil Society for Poverty Reduction, 2006).

All tasks associated with food production are largely performed by women. For instance, food processing for household consumption and marketing, which is a time

and labour consuming task is largely performed by women in many regions. In addition to food processing and marketing of the agricultural produce, women are largely responsible for food security, (Booth and Potais, 2000). The CED (2003) points out that small scale trading in some countries by women in the informal sector can account for 30-50% of GDP. Through food production and trade, women are able to earn extra income for their families thereby contributing to national production, (Ibid). However, women's income is often controlled by men in the household.

Furthermore, women make substantial contributions in both industrial and export trade. They provide cheap labour in the majority of manufacturing industries and make significant contributions to the growth of export markets of manufactured products. The CED observed that "in the contemporary era, no strong export performance in manufacturers by any developing country has ever been secure without reliance on female labour," (CED, 2003:5). Despite enabling women to attain personal independence, greater physical mobility and perhaps removing the obstacles associated with gender and other forms of male dominance, women tend to have insufficient skills due to their low levels of education, health and training in organised labour force. Consequently, they tend to be poorly paid and underrepresented in these low wage positions, (Ibid).

Moreover, women account for a considerable portion of entrepreneurs, retail traders and services in many underdeveloped countries. As entrepreneurs, women tend to be largely responsible for running small business enterprises often specialised in traditional activities such as food preparation, dyeing, printing, photocopying, tailoring, selling and handicrafts than their male counterparts. In retail trade and services, women account for a considerable amount of labour. While in service employment such as teaching, women also comprise a large portion of labour in many regions, (Ibid). Although such tasks are less profitable and often require the use of simple technologies, women tend to make substantial contributions to the development of the economy through these income generating activities.

The reproductive role of women is perhaps also one of the important areas of women's contributions to the development of any society. It is not practically at all

for any society to develop without human resources. Women give birth to human resources, the leaders of tomorrow and indeed the future generation. Women are largely responsible for nurturing children often in large numbers in many African countries, (Ibid). Nurturing of children from childhood to responsible adult is a demanding responsibility which is mainly executed by women. This is one of the reasons why women seldom find time to work in paid jobs. The responsibility entails providing for the basic needs of families. Such needs include food, health, education and nutrition and general survival of the household. Women tend to be principal providers of these basic needs. They spend a large proportion of their incomes on basic needs and general well-being of the family.

Women especially in African countries are largely responsible for gathering energy for cooking and heating and for fetching water cooking, drinking and other uses. These tasks are time and labour consuming and involve walking long distances for several hours in search of fuel or water. In most cases, women also take the responsibility of preparing food for the family taking into consideration the dietary needs of every member of the family. Food preparation has to be done several times in a day, hence it's also a time and labour consuming task, (Booth and Protais, 2000, CED, 2003, Huyer, 2004). Box 1 below summarises women's contributions in households, food production and enterprises:

Box 1
Rights and obligations in traditional household, farming or enterprise activities

<i>Household, farming or enterprise activity</i>	
Men:	cash crops, large livestock
Women:	child rearing and household maintenance (including food preparation, gathering water and fuel), food and horticultural crops, small livestock, agro-processing and trading (home based)
<i>Farming tasks</i>	
Men:	clear land
Women:	plant, weed, process and store agricultural products
<i>Separate fields and plots:</i>	
Men and women:	each responsible for own inputs and controlled outputs
<i>Jointly managed plots</i>	
Men and women:	share labour input, use proceeds for family purposes
<i>Land rights</i>	
Men:	ownership
Women:	insecure tenureship, determined by husband or male relatives
<i>Input rights</i>	
Men:	right to resources such as land, labour, technical information and credit
Women:	access to these resources determined by men

Adapted from Booth and Protais, (2000)

Women also constitute the majority of the electorate partly due to the fact that they are the majority of the population in many regions including Zambia. However, the percentage of women as leaders of governments, in parliament and public service remains relatively low. Discrimination against women is the major impediment to women's active participation in politics.

Taking into account all of women's work: productive, reproductive and socio-political, one can arguably claim that women's economic contribution increases spectacularly and generally surpasses men's contribution. Yet women in general experience greater difficulty than men in securing essential resources and basic resources such as health and nutritional services, education, physical and financial capital and land, (CED, 2003). Above all, women lack appropriate information which is critical to enhance their contributions in all aspects of development on a continuous basis, (UNECA, 2006). Therefore, they remain uninformed about many issues that affect them and their development, (Zambia Association for Research and Development (ZARD) (2007). Due to limited information and knowledge among other things about human rights issues, women suffer great injustices and their rights are violated. They are the majority of the illiterate people and more vulnerable to major diseases such as HIV/AIDS, Tuberculosis and malaria in many developing

countries. Despite being the majority in many regions, women remain the silent majority with limited access to economic decision making bodies in the economic field. Given the opportunity, women's contributions to the overall development process could increase substantially, (CED, 2003). ICTs are some of the tools women can seize to access development information to create efficiencies and build an income.

2.3 Women's information needs

McNamara (2003) observed that many discussions make a mistake of focusing first on technologies and their capabilities rather than on the needs of specific groups and the most appropriate technologies to address those needs. Hence, before discussing the potential of ICTs in enabling access to development information, it is imperative to assess the information needs of women.

What information do women need? This is a pertinent question asked by Dasgupta (2001). Information need according to Dasgupta, is of different types: need for traditional information, need for personal information and need for development oriented information. Thus the need for information largely depends on what one wants to utilise the information for. The information needs of women are highly influenced by diverse factors such as social (i.e. caste, class, urban/rural, literate/illiterate, educated/uneducated); economic (i.e. employed/unemployed, employed in organised sector, employed in unorganised sector, self employed, housewife); and familial norms and hierarchy (i.e. parenting, child care, health, household needs, family planning, legal security, crime and safety, mobility, migration). These factors also influence their information seeking patterns, (Ibid). Furthermore, different categories of women have different types of information needs.

For Momo (2000) women's information needs are recognised in practically all spheres of social life. She therefore, outlined the information needs of women as shown in Table 1 below:

Table 1: Women's Information Needs

Social sphere	Information need
Education	Basic education or better, training
Health	Hygiene, disease prevention (e.g. HIV/AIDS) and treatment, family planning techniques to lower fertility rates, reduce early pregnancies, decrease infant and maternal mortality.
Agriculture	Improved seed selection and cultivation, irrigation, fallowing techniques, post harvest technologies, food conservation.
Environment	Environmental disasters and crises (e.g. droughts, floods), techniques for management and conservation of the environment and soil.
Law	Human rights and obligations (to protect against all forms of violence such as sexual, physical, social and professional).
Economy	Commercial activities (e.g. international market trends, exchange rate fluctuations, market prices, prices of goods and services and bank transactions).
Professions	Training (e.g. refresher course), seminars, meetings
Society	Formulation of associations and professional groups
Culture	Cultures, vestiges (i.e. of villages, towns, country), traditional practices, modern life.
Tourism	National, regional and world affairs
Politics	Participation, expression

On the other hand, a study conducted by Urbis Keys Young (2002) on women's information needs revealed that woman's information needs are ever-changing, reflecting the life cycle and changes in personal, financial, social and family circumstances. Consequently, their information needs and information-seeking behaviour tends to be highly situational and often determined by such factors as age, socio-economic status, level of education, family circumstances and ethnicity among other things, (Ibid).

Furthermore, Olorunda (2004) maintains that women possess needs that vary from personal; health, financial; spiritual; professional to economic. Since women need to sustain themselves and their families, they possess economic information needs and thus require information concerning their social and economic environments. Their

information needs for development information and hence economic information needs facilitate socio-economic and political development.

With respect to ICTs, (Olorunda: 2004:5) states that “education, knowledge, information and communication are at the core of human progress, endeavour and well-being.” Therefore, women’s information needs in the field of ICT involves not only education and training, communication, information in all aspects of life but also concerns access and use of ICTs, awareness of the information revolution, awareness of their information needs, development of sufficient technical knowledge, participation in ICT policy formulation and social and policy recognition of women’s vital contributions in technology.

2.4 The role of ICTs in enabling individuals particularly women access development information

Numerous studies demonstrate that ICTs have the potential to meet the development information needs of individuals particularly women. Gerster and Zimmeermann (2003) demonstrate the potential of ICTs in facilitating the creation, storage, access, management and dissemination of information by highlighting four key features of ICTs: (i) interactivity: ICTs are effective two-way communication technologies. They provide instantaneous transmission of information and from individuals, organisations and nations at large; (ii) permanent availability: Individuals are not limited by time and location to access and use ICTs. ICTs can be accessed at any time; (iii) global reach: ICTs can be accessed and used from anywhere in the world by anyone regardless of colour, race, sex, class, culture, religion, language thereby reducing the world into a global village, (Munyua, 2000); and (iv) reduced costs: Many of these ICTs provide easy, inexpensive and rapid means of generating, accessing, storing, disseminating, transmitting and communicating huge amounts of information worldwide, (Yumba, 2002).

Consequently, ICTs has been recognised as valuable tools that can be used to access useful information. In fact, Primo (2003:44) states that “technology is...as useful as

the information it carries.” A similar view is held by Republic of Zambia (2005) who point out that the availability of [ICT] tools are as important as information itself For Kenny (2001) lack of access to ICTs is an element of poverty in the way that insufficient nutrition or inadequate shelter is.

Kenney (1995) observed that there is a link between all actors in development, information and communication networks and each of the essential components of sustainable socio-economic development: health, education and environment; good governance, freedom and respect for human rights; and the creation of wealth (see figure 1). Information on these development issues that is effectively communicated forms a powerful agent for growth and positive change in individuals and the development process at large. Information and communication networks such as ICTs play a crucial role in providing, informing, disseminating and communicating information and knowledge in virtually all aspects of life and across a broad spectrum of development actors and activities (Chapman and Slaymaker, 2002) including each of the components of sustainable socio-economic development. In addition, ICTs not only facilitate the delivery of most basic necessities but also empower individuals thereby enabling a people-based development approach, (Fors and Moreno, 2001).

Health: According to Morna and Khan (2000), the World Health Organisation alleges that 40% of health is exchanging information. Many of the health problems especially in developing countries are particularly due to lack of access to (up to date) information, (World Bank, 2000, Fors and Moreno, 2001) and communication, (Morna and Khan, 2000). Training materials are often out of date with individuals particularly women having limited access to latest information on new drugs or preventive treatments including appropriate expertise for accurate diagnosis. ICTs today provides individuals with relatively cheap and fast communication opportunities and access to current health information and medical literature, long-distance training, medical alerts, consultation, and collection of medical information, which in turn helps improve the quality of individuals and even overcome a shortage of current health information and the isolation of health professionals, (Fors and Moreno, 2001). Thus ICTs according to ITU (2006b) offer immense opportunities to enhance human health, hygiene and nutrition thereby enabling individuals to live

longer and healthy. Individuals in numerous distant places that cannot easily access hospitals as well as medical services are nowadays supported by telemedicine and digitized health information, thus assisting millions of people improve their every day life, (Ibid).

In Africa, particularly sub Saharan Africa which records high rates of HIV/AIDS pandemic (especially among women), ICTs presents unprecedented opportunities to combat the disease including other major diseases like TB and malaria by facilitating access to accurate, timely and reliable knowledge and information at relatively low cost about the disease, its causes, nature, symptoms, impact, consequences and prevention (Okpaku, 2003) to those infected, affected and those working on the problem.

Furthermore, as a platform for communication and information sharing, ICTs can play an influential role in meeting other women's specific health needs such as reproductive health. They can promote behavioural change and safe motherhood (Maitra, 2006) through awareness raising and increased knowledge about maternal and child health, safe water and basic nutrition, better food choices, family planning, averting, control and treatment of common diseases and injury including provision of basic and essential drugs.

Education: The ITU (2006c) argues that for countries with limited educational resources, ICTs present new opportunities to deliver education and training to schools, disadvantaged societies and individuals with special needs efficiently and cost-effectively. Individuals could benefit directly through access to educational information that the technologies provide to enhance their educational and literacy skills thereby bridging the educational divides and the wider global digital gap.

ICTs have the potential to enhance women's education opportunities in all areas of skill, work and life. In fact, Greenberg (2005) assumes that ICTs such as radio, television, computers and the Internet have proven to be valuable in practically all aspects of education in less developed nations including teacher training; primary, secondary and university education; adult training; technical training; vocational

training; distance education; teacher networking; student networking; central education administration; and local/district/university administration.

Women can use ICTs to create learning communities and support life long learning. Lifelong learning and knowledge is crucial for to women's economic well-being, Kirkup (2002) points out that 'multiversity,' a term that implies that universities are not anymore based on a collective body of knowledge or a diverse body of students, has gained popularity in recent years among digital learning providers. Thus universities' role has been challenged in the globalized and networked world. Individuals particularly women can use the technology to advance their education of any kind including higher education, professional education and life skills education offered by different universities, colleges and adult education institutions, and commercial providers online, thereby bridging the educational gap in access to higher education and professional education, (Ibid).

Women, who in most cases find it difficult to leave their family responsibilities to further their schooling and education somewhere can take advantage of the flexibility virtual learning through open and distance learning using ICTs. Rather than being confined to the source or provider of instruction, distance or open learning through ICTs enables individuals to acquire knowledge and skills from any part of the world. Online learning facilitates access to various resources and services such as educational resources such as global access to information, people and intellectual tools and promotes communication and collaboration between teachers and students, (Ibid).

ICTs could also be useful tools for women to not only develop networks but also produce and disseminate knowledge "in the development of social, pedagogical and technological research, in the training of teachers and trainers, and in the continuous professional development which is a hallmark of the knowledge society' (European Union, 2001: 4). Networked digital communications can enable women from all over the world to connect with their teachers, colleagues and the content from all corners of regardless of time and space, (Kirkup, 2002). Thus Momo (2000) asserts that the majority of women are building networks to avert themselves in the development process, enrich and renew reflections and cooperation such issues as health,

agriculture and trade and discuss with others issues pertaining to their socioeconomic emancipation through meetings in all over the world.

Agriculture: In agriculture, the role of ICTs in enabling individual access, disseminate and exchange agricultural information has been highlighted by Munyua (2000). Munyua argues both traditional and modern ICTs such as radio, television, Internet and mobile phones are requisite in rapid dissemination and access to reliable and comprehensive agricultural information. According to Munyua, women can use ICTs to easily access relevant agricultural information in order to empower themselves to participate in agricultural decision making, exchange ideas and indigenous knowledge with other farmers in different parts of the world and improve their quality of life and that of society by becoming more productive. Additionally, women can use ICTs to access and share vital information on agricultural inputs (i.e. fertilisers, pesticides, seeds, etc), market prices, transportation systems, product potential, new environmentally sound production techniques and practices, new agricultural technologies, new markets (both local and international), food processing and preservation, the resource base, trade laws and trends in food production and demand across the globe, (Munyua, 2000, and McNamara, 2003).

Supporting the fundamental role of ICTs can play in the agricultural sector, the IDRC (2003) observed that ICTs have the potential to improve agricultural information provision and access on soils, hydrology, rainfall and improved socioeconomic value ratings, communication and utilities to support decision making and planning at various administrative levels in the agricultural sector. Small and medium scale farmers can access agricultural research, services and education thereby making their farms more profitable and their farming practices more sustainable. The world Bank (2000) also points out that ICTs can play an influential role in developing human capability for food security in Africa, by providing individuals with the knowledge and skills they require to put agricultural science and production inputs to best use. Moreover, they can enable individuals increase their awareness of and access to sustainable agricultural approaches, (McNamara, 2003).

Furthermore, Dube et al, (1994) observed that ICTs such as those to do with Geographically based Information Systems (GIS) have the potential to overcome

distances in agricultural data collection and breaks the communication barrier. technology has the potential to enable the farmer to identify suitable site, agriculturally potential areas over the maps and in the analysis preparation of crop plan.

Good governance: ICTs have been perceived as potential tools for promoting good governance values. They offer a new form of democracy ‘democratisation of access to information’ which not only enable all good governance actors including women to publish, access, receive and exchange information a communication about development but also open up enormous possibilities for improving social and economic dialogue between government authorities and the population they serve, (Women’s Net, 2004). The elements of good governance as highlighted by Women’s Net include: participation, transparency, accountability, rule of law, efficiency and effectiveness, responsiveness, consensus orientation and equity.

In as far as participation is concerned, Women’s Net observed that full participation of all citizens, both men and women, is the best way to build and sustain democracies, reduce conflict and achieve human development. Through engaging in political and social dialogue, ICTs have the potential to promote women’s participation in the democratic process. ICTs play a fundamental role in this aspect by reducing the barriers to participation through provision and access to meaningful and accurate information and knowledge about governance issues such as civic information and electoral process. Knowledge and information on governance issues helps individuals to identify like-minded people, deliberate about their choices and voice their opinion, (IDRC, 2003).

Women’s access to information on governance issues through ICTs can foster a more pluralistic and open society, often driven by the rule of law and not the rule of man (Women’s Net, 2004) thereby creating a just, effective and efficient society for the benefit of everybody in society. Governments can use ICTs to efficiency and effectively deliver services to the public. Equally important, information on civil, social and political rights essential for individuals participate effectively in the development of their societies, exercise their rights, and make critical judgements

about civil, social, political aspects of the nation and its activities is now potentially available and easily and rapidly accessed through ICTs, (Rasmussen, 2001).

ICTs have also been seen as potential tools that foster transparency and accountability in the political system, (Gerster and Zimmermann, 2003). The ITU (2006d) allege that governments worldwide have embraced ICTs especially the Internet as a means of mainstreaming public policy decisions, practices and processes, while providing citizens with easier and easier access to government services. The rapid flow of information between the public and private sector and citizens has enhanced transparency and accountability. It has also created milieu of trust and reliability between citizen and elected officials in many regions, (Ibid) and corruption scandals are minimised.

Environment: Today, particularly in less developed regions, biological resources are under severe pressure. Many habitats and ecosystems are being destroyed leading to decrease in natural regenerative and buffering capacity and poor quality of the natural resource base, (ITU, 2006a). The decisive role of ICTs in facilitating access to environmental information for citizens: local, regional, and national authority businesses has been widely recognised. According to the ITU, ICTs have made it easier and faster to collect, distribute and analyze environmental information and data from many different sources thereby increasing the capacity of individuals and scientists to learn more about the world's ecosystem. ICTs also facilitate greater access to environmental information to global policy makers, allowing them to effectively address urgent problems through environmentally friendly common action, (Ibid).

The ITU (2006a) further claims that ICTs have speeded the rate at which information and knowledge can be communicated or shared between individuals about proper management of the social, natural and cultural environment including natural resource preservation and conservation for sustainability purposes. They have facilitated increased awareness of the need to develop production processes that conserve; restore and that do not negatively affect the stability and diversity of biological resources, thereby supporting sustainable use of biodiversity. Moreover, they enable individuals to access information and knowledge essential for averting

natural disasters and environmental degradation and desertification and promote sustainable land management, (Ibid).

The potential of ICTs in raising awareness about environmental issues among the public particularly women has also been highlighted by McNamara (2003) who point out that combining remote sensing technologies and communication networks can significantly enhance monitoring of environmental conditions and natural resource stocks. They can also allow early caveat of, and quick response to environmental emergencies. ICTs can further enhance the monitoring o environmental misuse and empower individuals in monitoring and enforcement of environmental regulations. They can also raise awareness about environmental issu s such as ozone depletion, global warming, and depleted supplies of fresh water a d give greater concerns of promoting sustainable livelihoods.

Water and sanitation: ICTs have further been regarded as potential tools for raising awareness about sustainable and hygienic use of water esources and disposal of waste products. Women being the major collectors and users of water especially in Africa require much more information and knowledge abo basic hygiene and health issues, safe water and disposal of wastes. ICTs facilitate global information and knowledge dissemination and access which helps individuals especially women to better understand these issues and problems solutions that may arise from unsustainable and unhygienic use of water including disposal of waste products. Consequently, this helps to reduce illnesses and promo e cost effective way of using water and disposing of wastes including the empowerment of individuals, (ITU, 2006e).

2.5 Gender differentials and barriers in access and use of ICTs

A number of studies have demonstrated that there are fewer women than men participating in the development, use and control of ICTs. For instance, Marcelle (2000) reveals that 64% of men dominate the computer/Internet use in Zambia. The factors contributing to this gender gap are complex and beyond. However, Primo

(2003) and Zulu, (2004) claim women often find themselves at a disadvantaged due to technophobia. They view technology as tools for men only. In school, girls are not encouraged to study science and technology, a trend which later results in low level participation of women, (Primo, 2003). Thus Rathgeber (2000) allege that women's disadvantaged position has nothing to do with male dominance in use of technology or inappropriate design of technologies. Women choose not to participate in the development and use of technology. They are also slow and hesitant in recognising the importance of specific new technologies.

Further arguments are held by Karelse and Sylla (2000) who believes that there is no obstacle that impedes women from using ICTs. Women just lack interest or sensation because of the sociocultural environment on their activities. While all these are some of the barriers for women to access and use ICTs, Zimmermann and Gerster, (2003:4) reminds us that "access to information is determined by (1) connectivity are the services available? (2) Affordability: can potential clients afford the access? (3) Capability: have the potential users have the skills required for access? The users' skills relates to technical abilities, language and literacy."

Connectivity: Apart from huge connection costs, connectivity depends on infrastructure such as equipment, roads, electricity and transport among other things. These are unaffordable to many developing regions, communities and groups. Geographical distance, poverty all limits connectivity in poor and marginalised communities. All these impede women's access and use of technology. Sometimes even with connectivity, the poor especially women lack motivation including a certain level of competence to use the information on the Internet.

Affordability: ICTs especially computers and the Internet require huge investment in terms of connectivity, equipment and maintenance. The literacy of the people especially women cannot afford the high costs involved in acquiring, installing the maintaining the technology. Similarly, women according to Hafkin and Taggart (2001) cannot afford the high costs of using public access sites due to limited resources as compared to their male counterparts. Although women in the workforce might have the opportunity to access the technology in their workplaces, it is very

difficulty due to the fact that there can be only one computer and one modem with a dial-up connection that all staff have to share, (Ibid) in the entire organisation.

Capability: In order to use many of these ICTs, individuals require some understanding of how the network operates such as the Internet network and the structure of information itself so as to utilise it effectively. As pointed out by Hafkin and Taggart (2001), women comprise two thirds of the illiterate people in the world. They lack basic literacy, numeracy and computer skills to read, understand the structure of information, compile simple messages, navigate the Internet and execute commands in most software applications as compared to male counterparts. Additionally, one requires knowledge on how to search databases, use e-mail or participate in group discussions in order to use these technologies such as the Internet. Thus, access to information through ICTs has proved to be difficult for the majority of women and sometimes impossible for the information to be obtained due to lack of skills on how to handle them.

Furthermore, it is argued that the majority of technology users particularly in developing countries lack 'other resources to interact with sources [of information] outside their own community' such as (i) source nearness or an understanding of the context of the information shared through the Internet (ii) trust, knowledge and confidence/security, with knowledge being essential for users to assess whether information is correct or fake or of importance or unimportant and to apply information by adapting it to their specific requirements and situations, (Ibid).

It is also important to point out that most of the information, particularly on the Internet is of poor quality and unreliable due to the fact that there is, in most cases, no editorial process for one to publish on the Internet. Therefore, information from different sources may be false, invalid, outdated, poorly written or with many errors. Users require information literacy skills to evaluate the quality and reliability of the information before making applying it to real life contexts. In most cases, women lack information literacy skills than men, (Ibid).

Language: Language is another significant obstacle for many women to access information especially on the Internet. Most of the information available on the

Internet is predominantly in English thereby excluding those who do not understand English. The majority people especially women in developing countries who do not how to read, write or speak in English. However, Hafkin and Taggart (2001) claim there has been a considerable increase in information other languages on the Internet over the years with the English content dropping from 95% to 68.5% in 1999 and 2000 respectively.

Content: Gerster and Zimmermann (2003) observe that the information needs of the poor differ from the information accessible on most of the existing websites and therefore, lack relevant content. For instance, Primo contends that gender stereotypes predominate on the Internet other than women's viewpoints, knowledge, experiences and concerns. Most new information and communication content is of a masculinist rhetoric with sexualised and frequently sexist representation which often injury or exploit women. Again, a survey by the World Bank, (2000:156) revealed that Africa produces 0.04% of worldwide content which comes to 0.02% if South Africa is excluded. This obviously demonstrates that there is very little information on the Internet that would meet the needs of people in Africa.

2.6 Gaps in literature

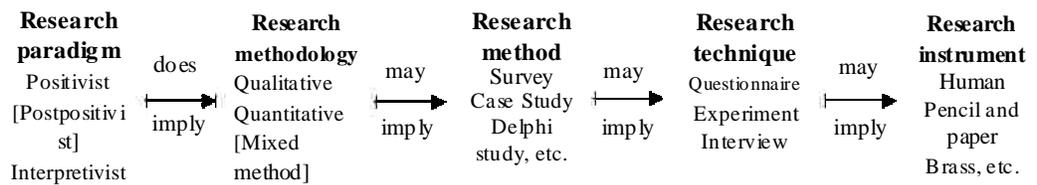
Literature clearly demonstrates the importance of individuals to access and use ICTs. However, incredibly few studies have been conducted on the link between ICTs, women and development information. Not only that, there are also very few studies that have been conducted on the importance and indeed relationship between information itself and development, (Momo, 2000).

From literature, it was further observed that there are few studies that have been conducted on the information needs of women and their access to appropriate information, (Huyer, 1997, Dasgupta, 2001, Momo, 2000 and Olorunda, 2004). Understanding and satisfying the information needs of women largely depends on identifying what kind of information women need. This can also help in designing appropriate technology for fulfilling these needs.

Thas et al., (2007:8) observed that lack of comprehensive surveys that document all the uses women make of ICT in underdeveloped nation. This clearly demonstrates the need for more surveys to be conducted on uses women make of ICTs. Morna and Khan, (2000) also observed the wide gap between research and action and therefore, call for more studies to be conducted focussing specifically on African women and technology needs.

CHAPTER 3: RESEARCH METHODOLOGY

This chapter highlights among other things the research paradigms, methodology, methods, techniques and instruments employed to address the objectives of the study. The framework of a research hierarchy by Pickard (2007) provides a basic understanding for designing and conducting a research study.



The research hierarchy (Adapted from Pickard, 2007)

3.1 Research paradigm

Pickard (2007:296) defines a paradigm as an “entire constellation of beliefs, values and techniques shared by a scientific community...and ...provide the concrete puzzle solution or exemplar of how to solve a scientific problem.” A research paradigm can be positivist, postpositivist and interpretivist, (Ibid). Positivism paradigm assumes that the external stimulus determines human behaviour and that principles and methods traditionally employed by the natural scientists can be used to observe and measure social phenomenon. On the other hand, postpositivism, as defined by Creswell (2003:7) “refers to the thinking after positivism.” It challenges the traditional notion of veritable truth of knowledge and recognises that it is not possible to be optimistic as regards claims of knowledge when studying human behaviour and actions. Interpretivism views the world as a construction of multiple realities. Each individual perceive their reality thro h their own unique understanding and experience. The focus of interpretivism is on individual experiences and lives, (Pickard, 2007). While both positivism and postpositivism paradigms are associated with quantitative approach, interpretivism largely involves

qualitative approach to the study. Mixed method may involve a combination of all paradigms.

3.2 Research methodology

A methodology, according to Pickard (2007) is perspective, the viewpoint which the researcher wishes to take on the question being asked. For example, the viewpoint of ‘how many?’ ‘how often?’ or ‘when?’ have to do with quantitative point of view while ‘why?’ or ‘how?’ have to do with qualitative point of view. Creswell (2003) identified three perspectives or approaches to research: quantitative, qualitative and mixed methods. This study was largely quantitative in nature. A quantitative approach is an empirical study in which the researcher explores relationships using numerical data and findings can often be generalised. Qualitative approach is an empirical study in which the research explores relationships using textual, descriptive, narrative rather than numerical data, (Pickard, 2007). The mixed method is relatively new. Recognising that all methods have limitations, Creswell (2003) points out that scientists felt that biases inherent in any single method could neutralise or cancel the biases of other methods.

Whereas qualitative methods entail an inductive approach to the link between theories and research with an emphasis on generation of theories in order to uncover and discover patterns or theories that help explain a phenomenon concerned, quantitative methods employed in this study involved a deductive approach to the link between theory and research, (Bryman, 2004). The emphasis was on testing theories involving variables, numerical measurements and statistical methods of analysis in order to determine whether the predictive generalizations of theories were true thereby enabling the researcher to predict, understand and explain the phenomenon concerned.

Applying the quantitative methods of research, the underlying assumption held by the researcher was that the social reality is an external, objective reality independent of social actors and that the techniques and customs included in the research were indeed those of natural scientific replica and of positivism. This assumption is

contrary to qualitative methods which emphasises the ways in which individuals interpret their social world and represent a constructivist point of view i.e. social reality is continually being accomplished by social actors, (Ibid). While the accuracy and reliability of information is determined by verification with qualitative methods, reliability and validity were the criterion employed for assessing the quality of this study with quantitative approach.

3.3 Research method and technique

Unlike qualitative research which employs methods such as case studies, ethnographic studies and phenomenological studies, quantitative research largely employs experiments (i.e. true experiments and quasi experiment) and surveys as methods of data collection. In order to collect primary data, this study largely involved a survey on the role of ICT's in professional women's access to development information in both public and private sector institutions in Lusaka, Zambia. This allowed for a firm follow up on the proposed set of objectives in order to arrive at more objective conclusions, hypothesis testing and determination of causality issues.

The main data collection instrument employed for primary data was a questionnaire. A questionnaire basically refers to a group of written or printed questions used as a tool for collecting information from respondents, (Yates, 2004). The researcher provides the questions and the respondents provide the answers. Although the researcher was aware of occurrences of misunderstandings including the fact that little rapport would be involved with the respondent, the self-administered questionnaire was the only inexpensive means that the researcher found appropriate considering the costs involved if interview was used. The self-administered questionnaire therefore, was an easier and faster way of collecting data for this study. In some way, this also helped to get rid of interviewer bias which could have impacted negatively in terms of validity and reliability of the data collected. In fact, the response rate turned out to be outstanding. This implies that the self-administered questionnaire was also convenient for participants although they received little help in when answering the questions. The researcher also observed that due to lack of

opportunity to probe the respondent to elaborate some answers, very little information was gotten from respondents. In addition, researcher had no opportunity to ask many questions salient to respondents and it was indeed difficult to even ask other or many questions for fear that respondents may not give answers to all of them. In fact, some questionnaires were partially answered.

Sampling: Sampling is essentially a method used to choose, in an appropriate way, a small and restricted set of persons, objects, events, and so on from which the actual information will be drawn in order to learn more about the whole population, (Bryman, 2004). Every individual of the population in this study was afforded the same chance, likelihood or probability of being selected. Based on the nature of this study and its purpose, a minimum sample of 200 professional women were selected from 20 institutions using simple random sampling so as to afford every participant from the mainstream the same chance of being selected. Another reason for employing simple random sampling was because all professional women manifest the same general characteristics such that anyone could be selected. Purposely selected, ten (10) of the institutions from which the sample was drawn were private sector institutions while another ten (10) comprised of public sector institutions. The public sector institutions included; Ministries of Home Affairs, Health, Education, Agriculture, Lands, Finance and National Planning, Energy, Foreign Affairs, Justice and Cabinet Office. Whereas the private sector institutions included; National Women's Lobby Group, Women for Change (WFC), Transparency International, Human Rights Commission, World Vision, ConcernWorldwide-Zambia, National AIDS Council, Bank of Zambia, Post Newspaper and Celtel Zambia.

Research design: It is important to determine the research design for the study because it provides a framework for the collection and analysis of data. By definition, a research design "consists of a clear statement of the research problem as well as plans for gathering, processing, and interpreting the observations intended to provide some resolution to the problem," (Singleton and Straits, 2005: 68). There are different research designs one can employ depending on the methodology employed for the study. In the case of qualitative approaches, ethnographies, phenomenological, case studies, grounded theory can be employed. If the study involved creating experiments and control groups in the case of quantitative approaches, then either

true or quasi experimental designs would be appropriate where the researcher would be required to control some aspects of the situation under study, (Yates, 2004). However, as mentioned above, this study was a survey type which, in fact, used a questionnaire to collect data. Therefore, the research design employed for this study was a non-experimental type, thus without controlled situations.

Data analysis: There are several methods of analysing data depending on the research approach used. For instance, for qualitative approach, analytical induction, grounded theory and computer software such as computer assisted software (CAQDAS) are some of the methods that can be used to analyse qualitative data, (Bryman, 2004). The software for analysing data employed for this study is Statistical Package for Social Sciences (SPSS). However, Yates (2004) mentions other statistical analysis software such as SAS, Statistica and Minitab which can also be used to analyse quantitative data. However, these were not chosen due to limited access.

3.4 Limitations of the study

The main limitation of this study was limited time. Being a survey type of research, large numbers of cases or participants were required for the study on which the generalisations were to be based. First, the logistical difficulties inherent in gathering a sufficiently large sample sabotaged the study. Secondly, the study had to be conducted within a short period of time.

Another major limitation was limited financial resources. As already mentioned above, the study employed a large number of participants which meant large expenses for printing, photocopying and posting of questionnaires. Occasionally, the research was also required to respond to some queries pertaining to the study by telephone and e-mail which proved to be expensive as well.

Again, due to limited financial resources, the researcher was not able to travel to Zambia where the research was based to physically administer the questionnaires. As such research assistants had to be employed to help with the administration of the

questionnaire and making follow-ups in various institutions. This meant extra expenses.

Since the study involved professional women, it was also very difficult to find them in the offices and even where they were found, there was some form of resistance because they claimed to be busy.

CHAPTER 4: RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presents the findings of the study. The study, largely quantitative in nature, was conducted in Lusaka, Zambia. To have a better representation of participants, 10 private and 10 public sector institutions were purposely selected. 200 professional women from these institutions were randomly selected. A questionnaire survey was used to gather the findings presented.

4.2 Findings and discussions

The analysis of the socio-economic background of the respondents as shown in table 1 indicates that a larger percentage of the respondents (50.5%) were between the age of 35 and 44 years old, while 27% of the respondents were between the age of 25 and 34 years old. The analysis further reveals that 21% of the respondents were above 45 years old and only 1.5% were below 25 years.

Table 1: Age of the respondents

Age	Frequency	Percentage
Below 25 years	3	1.5
Between 25 and 34 years	54	27
Between 35 and 44 years	101	50.5
Above 45 years	42	21
Total	200	100

With respect to level of education, the majority of the respondents as depicted in table 2 were educated up to university (79.5%) and college (17%) levels. Only 3.5% were educated up to secondary level. Thus it is clear from the findings that the larger proportion of the respondents were literate.

Table 2: Level of education of respondents

Education level	Frequency	Percentage
University education	159	79.5
College education	34	17
Secondary education	7	3.5
Total	200	100

Findings to specific objective 1: Professional women's access to ICTs

The results obtained from the field as shown in table below reveals that 99.5% of the respondents have a radio while only 0.5% of the respondents indicated that they do not have a radio. It was gratifying that all the respondents (100%) that were involved in the study indicated that they have a television. Additionally, findings reveal that 79.5% have a computer while 20.5% do not have a computer. It was further revealed that 65.5% of the respondents use Int net and 34.5% of the respondents indicated that they do not use Internet. A total of 82.5% of the respondent indicated that they have a landline phone while 17.5% indicated that they do not have a landline phone. 96.5% of the respondents indicated that they have a mobile phone while only 3.5% indicated that they do not have a mobile phone.

Table 3: Professional women's access to ICTs

	Radio	Television	Computer	Internet	Landline phone	Mobile phone
Yes	199	200	159	131	165	193
	99.5%	100%	79.5%	65.5%	82.5%	96.5%
No	1	0	41	69	35	7
	0.5%	0%	20.5%	34.5%	17.5%	3.5%
Missing	0	0	0	0	0	0
	0%	0%	0%	0%	0%	0%
Total	200	200	200	200	200	200
	100%	100%	100%	100%	100%	100%

The findings above demonstrate that the majority of the respondents have access to both old and new ICTs such as radio, television, computers, Internet, landline phones and mobile phones. Although the findings reveal that the majority of the respondents have access to television, radio, landline and mobile phones, it is clear that both old and new ICTs are considered vital tools by the majority of the respondents. Possibly the findings above concur with Hakkin & Taggart (2001) who observed that the majority of women who have access to ICTs in less developed countries use it at work. It is most likely therefore, that the majority of the respondents use the above ICTs at their work places.

Furthermore, Bynin et al (2000) and Torero and Braun, (2006) observed that access and usage of ICTs is largely influenced by income and education among other things. Due to the fact that all the respondents were working women, this could mean that the majority of the respondents can afford access and use of ICTs through the income they earn. Brynin et al. (2000:3), states that “work supplies resources which are necessary to buy and support ...ICTs. Moreover, it often supplies training and experience in ICT usage. Thus it is not age or gender themselves which limit ICT behaviour-that is, fear of or inexperience in technology plays a rather minor role-but differential resources.” Moreover, since the findings table 2 reveal that all the respondents had an advanced level of education, it is most likely the majority of the respondents have the knowledge and the skill to use ICTs.

Findings to specific objective 1 and 2: Professional women’s access to development information and the kinds of development information they access using different types of ICTs

Due to the fact that each of these ICTs i.e. radio, television, computer, Internet, land phone and mobile phone have their own respective different roles and impact in terms of informing and communicating information, respondents were asked the uses they make with each of the ICTs.

Radio

Although the findings reveal that professional women use radio to access development information, it was found that the largest proportion of the respondents as shown in table 4 use the radio to listen to the news (25%), followed by programmes on health (19.5%), education, (14%), good governance (9%), gender issues (6.5%), environment (6%), water and sanitation (6%) and agriculture (5.5%). 4% indicated that they use the radio for entertainment and another 4% use it for other purposes such as listening to religious programmes and for making contributions to phone in programmes, that is, programmes on various contentious issues aimed at drawing public opinions.

Table 4: Distribution of respondents as per programmes listened to on radio

Programmes	Frequency	Percentage
News	50	25
Education	28	14
Health	39	19.5
Agriculture	11	5.5
Gender issues	13	6.5
Good governance	18	9
Environment	12	6
Water and sanitation	12	6
Entertainment	8	4
Other (s)	8	4
Missing	1	0.5
Total	200	100

In general, it is clear from the findings that radio still plays a fundamental role as a medium for providing and accessing development information for the majority of the respondents. This could be attributed to the fact that radio is cheaper, accessible and provides cost effective means of accessing information and communication for development, (Greenberg, 2005). It overcomes barriers to infrastructure, language and skills to operate and use it (Gerster and Zimmeerman, 2003) and is more appropriate and adaptable to the local needs (McNamara, 2003). “Apart from the human voice used face-to-face, it is the greatest vehicle for dissemination of informational content known to humankind. Radio content is cheap to create and

cheap to consume, and neither the creators nor the consumers of radio content need to be able to read or write due to the oral nature of radio...radio content can also be transmitted in oral languages,” (Githaiga, 2005:1).

Increase in utilisation of radio as a source for development information could also be attributed to the fact that radio today is becoming more interactive in the sense that it is possible to utilize radio concurrently with digital systems to accessing information on the Internet (i.e. radio browsing), storing radio programmes and computerized programming as well as communicating with radio audiences via Internet and mobile telephones, (Hafkin and Odame, 2002) thereby attracting wide usage of radio among women.

Television

From the findings presented in table 5, television also appears to be one of mostly used medium for accessing news (18%), followed by programmes on health (14.5%), education (14.5%), agriculture (10%), gender issues (4.5%), good governance (12.5%), environment (6%), and water and sanitation (5.5%). 12.5% of the respondents consider television as a medium for entertainment with only 2% using it for other purposes such as watching religious and cooking programmes.

Table 5: Distribution of respondents as per programmes watched on television

Programmes	Frequency	Percentage
News	36	18
Education	29	14.5
Health	29	14.5
Agriculture	20	10
Gender issues	9	4.5
Good governance	25	12.5
Environment	12	6
Water and sanitation	11	5.5
Entertainment	25	12.5
Other (s)	4	2
Total	200	100

The results from the field suggest that television just like the radio is not only popular but also an effective tool for providing and enabling access to information and knowledge to all segments of society particularly women. Their ability to instantly transmit information and opinion with great potential and direct to the individuals makes radio and television the most common source for information in varied aspects of the economy and communication.

Computer

While the findings reveal that the computer is used for storage and exchange of development information, the majority of the respondents as shown in table 6 use the computer for working purposes (20%), followed by storage and exchange of information on health (14.5%), water and sanitation (10.5%), good governance (9.5%), agriculture (7%), gender issues (5.5%), environment (5%) and education (4.5%) and entertainment (3%).

Table 6: Distribution of respondents as per use of computer

use	Frequency	Percentage
Working	40	20
Educational purposes	9	4.5
Store & exchange health information	29	14.5
Store & exchange agricultural information	14	7
Store & exchange information on gender issues	11	5.5
Store & exchange information on good governance	19	9.5
Store & exchange environmental information	10	5
Store & exchange information on water and sanitation	21	10.5
Entertainment	6	3
Missing	41	20.5
Total	200	100

From the findings, it is disappointing that very few respondents utilise computer technology for storage and exchanging development information. It is imperative to note that computers are very reliable, efficient and accurate tools for processing,

accessing, storing and exchanging of data usable for all aspects of life. Besides, computer communication programs can enable individuals to connect a personal computer to other computers thereby enabling them to exchange information with one another using their personal computers. Communication programs can further allow individuals to link their personal computers with databanks i.e. huge collections of information stored in large centralized computers. Individuals can obtain any information and data of interest to many users can be obtained from a databank. Increased use of computers for such purposes would result in significant changes in the knowledge levels of women on pertinent issues affecting their social, cultural, political and economic lives.

Internet

Regarding the use of Internet, findings from the field reveal that the majority of the respondents (17%) essentially use Internet for e-mail purposes. A total of 11% of the respondents indicated that they use Internet to search for health information while 8% use it to search for information on education. Another 8% of the respondents indicated that they use the Internet to search for information on gender issues and 5% use it to search for information on good governance. Furthermore, 4.5% of the respondents use the Internet to search for environmental information and 3.5% of the respondents use it to search for information on water and sanitation. Only 3 and 2.5% use the Internet for entertainment and agricultural information respectively.

Table 7: Distribution of respondents as per use of Internet

Use	Frequency	Percentage
News	7	3.5
E-mail	34	17
Seeking educational information	16	8
Seeking health information	22	11
Seeking agricultural information	5	2.5
Seeking information on gender issues	16	8
Seeking information on good governance	10	5
Seeking environmental information	9	4.5
Seeking information on water & sanitation	7	3.5

Entertainment	6	3
Missing	68	34
Total	200	100

From the findings, it is disappointing that the majority of women limit their use of Internet to e-mail. The findings concur with Hafkin and Taggart (2001), Hafkin and Odame (2002) and Primo (2003) who observed that the majority of women in less developed countries only use the Internet for email purposes and e-mail discussion lists for advocacy and networking purposes due to high costs, limited technical skills and bandwidth. Thus the findings show that not many women use Internet to seek information on health, education, agriculture, gender issues, good governance, environment, water and sanitation vital for enhancing their quality of life and contribute effectively to their national development.

Yet as noted by a number of ICT commentators, the Internet has developed into an information superhighway where much more good and useful including 'hard to find' and sensitive information can be accessed with greater privacy including text, sound, images, voice and moving pictures,(Morna and Khan, 2000) in all subject areas. Internet is one of the effective means for sharing and exchanging information, ideas, data, views, products with people of all races, classes and ages. Women should not miss out the opportunity to utilise this technology to access information relevant to their lives and increase their efficiencies and income. In fact Munyua (2002) also observed that the Internet is reasonably inexpensive, fast, two way medium and a potent tool for storage, retrieval, dissemination and sharing on information. Thus she alleges that it is the most important communication medium in the world.

As a powerful tool for communication, Internet including other ICTs is at the core of human empowerment, (Opoku-Mensah, 2000). It has the potential to address various aspects of poverty. Greenberg (2005:) states that "humans are social creatures and communications in all forms can help foster feelings of well-being and empowerment... People want to know what is going on around them, and want to feel that there are mechanisms by which they can have influence over them," (Greenberg, 2005). Therefore, women should therefore, seize this technology to

support their empowerment and advancement by accessing relevant and timely information..

Landline phone

According to the findings in Table 8, 20% of the respondents indicated that they use the landline phone for emergency purposes. While 6% use the telephone as a source for educational information. 15.5% use the landline phone as a source for health information and 5% use it as a source for agricultural information. Furthermore, 11.5% of the respondents use the landline phone as a source or information on gender issues while 7.5% use it as a source for good governance. A total of 5.5% of the respondents indicated that they use landline phone as a source for information on environment and while 5.5% use it as a source for information on water and sanitation. Other uses (5.5%) of landline phone that respondents indicated included overcoming isolation and social interaction.

Table 8: Distribution of respondents as per use of Landline phone

Use	Frequency	Percentage
For emergencies	40	20
Source for educational information	12	6
Source for health information	31	15.5
Source for agricultural information	10	5
Source for information on gender issues	23	11.5
Source for information on good governance	15	7.5
Source for environmental information	11	5.5
Source for information on water and sanitation	11	5.5
Other (s)	11	5.5
Missing	36	18
Total	200	100

Generally, the findings show that landline is used as a source for development information. However, there is low utilisation of land line phone as a source for educational, agricultural, environment, water and sanitation and good governance. This is disappointing because landline phone provides particularly women with not

only convenient but also confidential, quick, cheap, a cessible and time consuming means of obtaining vast amounts of information, (Urbis Keys Young, 2000). Unlike Internet-based which requires higher-quality information and communications, electricity, technology infrastructure, and literacy in a computer-supported language, landline phone can operate regardless of the language spoken and do not require literacy, (Greenberg, 2005). Women should use the landline phone to access relevant information especially on the above areas.

Mobile phone

In the case of mobile phone, findings also reveal that the majority of the respondents use it for emergency purposes (22.5%) while 12% of the respondents use it as a source for educational information. A total of 16.5% of the respondents use the mobile phone as a source for health information and 10% use it as a source for agricultural information. 11% and 6.5% of the respondents indicated that they use a mobile phone as a source for information on gender issues and good governance respectively. While 6% use it as a source for environmental information. Only 3% of the respondents use the mobile as a source for information on water and sanitation. While 3.5% of the respondents indicated that they use the mobile phone for entertainment, 5.5% use it for other purposes such as social interaction, storing information, calculation and overcoming isolation.

Table 9: Distribution of respondents as per use of mobile phone

Use	Frequency	Percentage
For emergencies	45	22.5
Source for educational information	24	12
Source for health information	33	16.5
Source for agricultural information	20	10
Source for information on gender issues	22	11
Source for information on good governance	13	6.5
Source for environmental information	12	6
Source for information on water and sanitation	6	3
Entertainment	7	3.5
Other (s)	11	5.5
Missing	7	3.5
Total	200	100

The findings above generally reveal that mobile phone constitutes the primary source for development information. This is attributed to the fact that it is easy to operate and supplies an immediate need for communication with no limit on time and space. Unlike landline phone, mobile phone is easier and cheaper to acquire. It is also widely accessible and more relevant to the local needs and unlike Internet mobile phone allows individuals to communicate in their own local languages thereby enabling people to access information in their local language, (Wakunuma, 2007).

To sum up, the findings above demonstrate that the majority of the respondents have access to development information. They use ICTs such radio, television, computer, Internet, land phone and mobile phone to access such kind of development information as health, education, agriculture, gender issues, environment, good governance, water and sanitation.

Findings to specific objective 4: The language in which development information is accessed using different types of ICTs

With regard to language in which development information is accessed, the findings depicted in table 10 below reveal that the majority of the respondents use English to

access development information on radio (44%), television (44%), computer (66%), Internet (65.5%), Landline phone (26.5%) and mobile phone (25.5%). In addition, the findings reveal that development information is also accessed in Zambian local languages such as Bemba, Nyanja/Chewa, Lozi, Tonga, Kaonde, Luvale and other local languages. Bemba, is mainly used to access information on radio (10%), television (9.5%), landline phone (10%) and mobile phone (12.5%). Only 2.5% use the Bemba to access information on the computer. Furthermore, Nyanja/Chewa is used to access information mostly on Television (13.5% , followed by Mobile phone (12%), landline phone (11.5%), radio (11%) and computer (4%). No respondents indicated that they use Nyanja/Chewa to search for information on the internet.

Moreover, the majority of the respondents (13%) access information on mobile phone in Lozi, followed by television (9.5%), landline phone (8.5%), radio (7.5%) computer (1.5%) and internet. Tonga is mainly used to access information on television (8%) and landline phone (8%), followed by mobile phone (7.5%), radio (7%) and computer (2%). No respondents use the Tonga to access information on the Internet. The findings also reveal that the majority of the respondents (9.9%) use Kaonde to access information on the mobile phone, followed by television (7.5%), radio (7%), landline phone (7%) and computer (1.5%). On the other hand, the majority of the respondents (10%) use Luvale to access information on the radio, followed by mobile phone (9.5%), television (8%), landline phone (7.5%), computer (2%).

Table 10: Language in which development information is accessed through various ICTs

	Radio	Television	Computer	Internet	Landline phone	Mobile phone
English	88	88	132	131	53	51
	44%	44%	66%	65.5%	26.5%	25.5%
Bemba	20	19	5	0	20	25
Nyanja/Chewa	10%	9.5%	2.5%	0%	10%	12.5%
	22	27	8	0	23	24
	11%	13.5%	4%	0%	11.5%	12%
Lozi	15	19	3	0	17	26
	7.5%	9.5%	1.5%	0%	8.5%	13%
Tonga	14	16	4	0	16	15
	7%	8%	2%	0%	8%	7.5%
Kaonde	14	15	3	0	14	19
	7%	7.5%	1.5%	0%	7%	9.5%
Luvale	20	16	4	0	15	19
	10%	8%	2%	0%	7.5%	9.5%
Other (s)	6	0	0	0	8	16
	3%	0%	0%	0%	4%	8%
Missing	1	0	41	69	34	5
	0.5%	0%	20.5%	34.5%	17%	2.5%
Total	200	200	200	200	200	200
	100%	100%	100%	100%	100%	100%

In general, the findings reveal that the old ICTs such as radio, television and landline phone, including the mobile phone as a new ICT are used to access information in both local and English languages. When it comes to Internet and computer, English is the main language through which information is accessed. This also explains the reason why old ICTs are widely accessed and used by the majority of the respondents. With the new ICTs such as the Internet, individuals are limited to English language to access information and this implies that those who do not know English find it difficult to access information on the Internet.

Findings to specific objective 5: Barriers to use ICTs to access development information

According to the findings, professional women have barriers to relevant content; language that include ICT connectivity; costs of equipment, maintenance and connectivity; knowledge and skills; distance; marginalisation by gender; and time. However, it is clear from the findings that the major barrier to access and use ICTs for the majority of the respondents (26%) as shown in table 11 is high costs of equipment, maintenance and connectivity, followed by limited knowledge and skills (22%) to use ICTs. The findings further reveal that 16.5% of the respondents lack adequate time to use ICTs. 15.5% face the problem of limited ICT connectivity. A total of 9% of the respondents face the problem of relevant content. Only 4.5% of the respondents face the problem with language, distance () and marginalisation (2%).

Table 11: Barriers to ICT access and use

Barriers	Frequency	Percentage
Lack of relevant content	18	9
Language barrier	9	4.5
Limited connectivity	31	15.5
High costs of equipment, maintenance and connectivity	52	26
Limited knowledge and skills to use ICTs	44	22
Distance	9	4.5
Marginalisation by gender	4	2
Inadequate time	33	16.5
Other (s)	0	0
Total	200	100

As noted by Hafkin and Odame (2002) and Primo (2003), all information and communication resources cost money. Women in most cases lack disposable income to forfeit for ICTs to access information because they tend to give more attention and higher priority on household needs such as food, health, education and clothing other than information. Besides, ICTs in most cases do not carry relevant content that meets the information needs of women in a usable form. Hence, they remain of little

interest and value to the majority of women, (Ibid). Gender bias also discourages women from accessing and using ICTs. Communication infrastructure particularly in Africa, according to Primo (2003) is a gender issue.

Effective and innovative use of ICTs to access development information requires information literacy skills, ICT skills, literacy and language. Information literacy basically entails the ability to recognise the need for information, locate, evaluate, access, communicate and use knowledge and information in varied contexts. Women than men often lack this skill (Ibid) including the skill to use ICTs. Kirkup (2002:11) states that “access to information is a useless resource if you don’t have the skills to evaluate and use it.” Literacy also plays an indispensable role in enabling access and use of technology and information. Literacy, according to Batra and Grove (1994) is a basic tool for communication and learning, for acquiring, sharing and exchanging information and knowledge. It creates quest for information, self learning and understanding thereby generating the demand for information and communication services.

Language also limits women to access ICTs. This is so because the languages that dominate particularly on the Web are international languages such as English, French, Chinese, German and Japanese languages not familiar to the majority of women. Furthermore, since most information and communication facilities are located at far distant places or outdoor, and because of the multiple roles and heavy domestic responsibilities, (Ibid), mobility, distance and time constraints to be some of the barriers for women to use ICTs.

Other sources used to access development information

Respondents were asked whether they use other sources to access development information apart from radio, television, computer, landline and mobile phones. Print newspaper (30%) is the most common source that the majority of the respondents use, followed by libraries or information centres (29%), friends and families (20.5%), women’s groups (10.5%) and church (10%). The findings are presented in table 11.

Table 12: Other sources of development information

	Frequency	Percentage
Libraries or information centres	58	29
Friends and families	41	20.5
Print newspapers	60	30
Church	20	10
Women's groups	21	10.5
Total	200	100

The findings above concur with the Republic of Zambia (2005) that access to information by the majority of the people in Zambia is mainly through physical means such as libraries or information centre, print media, radio and television due to the fact that information access by way of networked systems such as Internet and mobile phones is very limited mainly, due to non-availability of telecommunications infrastructure and high access costs for many consumers.

While print newspapers are a good source of development information, it should be noted that in most cases the information often included in newspaper articles is more general and do not cover more specific issues. In addition, the reliability of the information provided in newspapers is in most cases questionable and sometimes misleading, (Urbis Keys Young, 2000). Similarly, libraries or information centres have long being used as some of the major sources of information. However, these may not be more convenient for women in terms of mobility and time. With ICTs such as radio, television, mobile women can access information directly to their homes or wherever they are.

Importance of accessing development information

Respondents were asked to rate the importance of accessing development information. The majority of the respondents (86%) indicated that it was very important for them to access development information. While 13% indicated that it was fairly important, 0.5% indicated that it was neither important nor unimportant for them to access development information. Another 0.5% indicated that it was not at all important.

Table 13: Importance of having access to development information

	Frequency	Percentage
Very important	172	86
Fairly important	26	13
Neither important nor unimportant	1	0.5
Not all important	1	0.5
Total	200	100

It is indeed imperative for women to access development information. Development information enables individuals to acquire capabilities of enhancing the quality of their life. It increases the efficiency, productivity and has great potential to generate income for individuals. Development information is the core for development of an informed citizenry.

Information on health for instance, enriches the knowledge of individuals of curative and preventive measures. Similarly, information on education not only broadens the knowledge levels of individuals but also helps women to enhance their living standards, reduce fertility and mortality rates, increase incomes and productivity, create better occupational opportunities and increase the availability of skilled labour among other benefits. Agricultural information enables farmers to know about sustainable farming practices, new seed varieties, the application, food security precautions, potential markets, market prices, application of fertilisers and pesticides. Access to such information adds a step further towards better utilisation of productive resources and increases in agricultural productivity which in turn may help to reduce poverty.

Being aware of gender issues such as gender equality, women's empowerment, gender discrimination and gender based violence is again one of the first steps for women to advocate for design and implementation of gender sensitive programmes. Women's active participation in the running of the affairs of their countries is thus critical. Women's knowledge of good governance matters such as human, civil and constitutional rights, laws and regulations would greatly enhance their political

participation, give them a voice, enhance their access to government services and promote transparency and accountability of governments.

Women's active involvement in the management and conservation of natural resources the promotion of sustainable livelihoods can be achieved by enriching their knowledge of environmental issues. In addition, being the major collectors and users of water including caring for the children and the sick, women's access to information on water and sanitation promotes women's access to safe water and proper sanitation and hygiene facilities.

Importance of women's access to ICTs

It also clear from the findings that the majority of the respondents (90.5%) recognise that it is very important for them to have access to ICTs. 8% of the respondents consider access to ICTs as fairly important. Only 1% and 0.5% of the respondents consider access to ICTs as neither important nor unimportant and not at all important respectively.

Table 14: Importance of having access to ICTs

	Frequency	Percentage
Very important	181	90.5
Fairly important	16	8
Neither important nor unimportant	2	1
Not at all important	1	0.5
Total	200	100

The importance for women today to have access ICTs cannot be overemphasised. The gains are numerous, as highlighted in this study. ICTs have the potential to meet the information needs of women in all aspects of development including social, economic, political and cultural.

CHAPTER 5: SUMMARY, CONCLUSION, RECOMMENDATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

5.1 Introduction

This chapter gives a summary, discussion, conclusions, recommendations and suggestions for future research and actions to improve women's access to development information through the use of ICTs.

5.2 Summary and Conclusion

This study has revealed that professional women have access to both old and new ICTs such as the radio, television, computer, Internet, landline and mobile phones. However, it was observed that a large proportion of women have access to television, followed by radio, landline and mobile phone, computer and Internet. Generally, the increase in access and use of ICTs among professional women suggest that these technologies are increasingly being recognised as vital tools for economic, social and political empowerment. The trend can also be attributed to the fact that professional women are literate and can afford an extra income for ICT access and use.

From the findings, it appears that professional women are making use of these ICTs to access development information such as information on health, education, agriculture, gender issues, good governance, environment and water and sanitation. Although this is the case, the findings reveal that the Internet, while also an important source of development information, is mainly used for e-mail purposes. The use of Internet mainly for e-mail purposes may obscure the majority of professional women the fact that Internet provides inexpensive and rapid access to vast amounts of useful information on every subject area. In spite of the many gains of having access to computer in as far as accessing, storage, processing and exchanging information is concerned, the findings further reveal that the majority of professional women use the computer largely for work purposes. Furthermore, landline and mobile phones according to the findings are largely used for emergency purposes.

Moreover, although the findings reveal that professional women access information in both English and local languages, the majority of the respondents indicated that they access information in English using different types of ICTs. This entails that in as much as language tend to be a barrier in some cases to access information especially on the Internet, it is a minor problem for professional women. Increasing use of both local and English according to the findings are mainly associated with old ICTs such as radio, television, landline phone and to a lesser extent, mobile phone..

In regard to barriers to access and use ICTs, the findings reveal that the majority of the respondents have main barriers including high costs of equipment, maintenance and connectivity; limited knowledge and skills; inadequate time and limited connectivity. Of these barriers, high cost of equipment, maintenance and connectivity is the problem the majority of the respondents experience, followed by limited knowledge and skills, inadequate time, limited connectivity, lack of relevant content, language barrier, distance and marginalisation by gender.

Results from the field further reveal that women use other sources to access development information. According to the findings, the majority of the respondents use print newspapers as alternative sources of development information followed by libraries or information centres, families and friends women's groups and church.

The findings have also revealed that the majority of the respondents recognizes the importance for them to have access to ICTs and development information.

5.3 Recommendations

1. There is need for production and dissemination of relevant and useful content based on local information needs of women for ICTs to be of interest and value to the majority of women. This should be done in close consultation with women.
2. There is need to increasingly make accessible development information in local language so that the majority of women unfamiliar with the

international languages that dominate the Internet can access information. Failure to do so will continue to make the messages suffer loss of content and information.

3. Decision makers including policy formulators on location, technology choice and costs should consider providing access to appropriate and more user friendly technology that benefit the majority of women at affordable costs and within reach.
4. There is need to provide women with the necessary skill low cost training and knowledge to enable them effectively and innovativ utilise ICTs and indeed to information and knowledge derived from them.
5. Women, being integral to the development process of any nation need to access development information vital for their effective contribution in all aspects of development.
6. Women should access and use ICTs primarily for accessing development information and not limit themselves to other types of information
7. The large proportions of development information or programmes are produced by the male counter parts with a male view of programmes or problems. For information and communication services to effec ively meet their development information needs, women should effectively participate in the production and dissemination of information and communication programmes for them to be credible and popular among them. In fact, Momo (2000) points out that the information needs of women cannot be understood of satisfied unless the women themselves contribute in determining and selecting means to spread this information.
8. The Internet provides vast amount of development information, be it health, education, agriculture, gender issues, good governance, environment and water and sanitation. Women should not limit themselves to use it for e-mail purposes. They should seize this technology to access velopment information.
9. The provision of development information through ICTs uld be strengthened and popularised
10. There is need for government and other stakeholders to make accessible development information using ICTs especially the Internet.

5.4 Recommendations for Future Research

To begin with, there are not many empirical studies on the linkages between ICTs, women and development information. More studies in this area would not only help to establish a clear linkage between ICTs, women and development information but also assist development planners and technology designers to plan and implement appropriate development programmes and technology for accessing these programmes.

Possible areas for further research involving women also come from Thas et al (2007) who observed that there are few comprehensive surveys that document all the uses women make of ICTs in less developed countries.

Dasgupta (2001) also points out that the information needs of women and their views on the available information have seldom been studied as a research topic or as a critical issue. A similar observation has been noted by other authors such as Huyer, (1997), Momo, (2000) and Olorunda (2004). Therefore, there is need to urgently study the information needs, women's access to appropriate information including the information seeking behaviour of women of diverse situations and backgrounds.

Another suggestion for future research can be drawn from Adeya (2003). Adeya points out that there is need for more case studies on the importance of women and ICTs particularly for reducing poverty, and on the impact or non impact of ICTs on women. The impact of ICTs needs to be analysed not only by using quantitative but also qualitative approaches. Research in this area would assist in identifying the potential of ICTs for women in various aspects of life. It would also assist planners and implementers to design, evaluate and make better uses of ICTs for women.

Adeya further highlights a number of possible topics for research to include:

- ICT impact from an interdisciplinary approach
- The link between poverty and ICTs
- The need to assessment of the curricular used or proposed to be used on the study of ICTs in order to make certain that the right approach and appropriate content is bien used in underdeveloped nations to train their human resources.

- Kinds of technical problems women encounter, and the exact interpretation of women-friendly systems
- Potential of ICTs for women and market trade
- The state of national ICT policies, the degree of involvement of women in the process of developing these policies and the gender aspect in the policies
- Cultural values and ICTs
- Cultural identity of ICTs, (Ibid).

The impact of ICTs largely depends on the attitudes of users and their expectations and also on institutions, organisations and management including the role of policy makers, (Ibid). Research in this area is therefore, critical in establishing the impact of ICTs on women especially.

Morna and Khan (2000) also observed the great gap between research and action. They point out that numerous discourses about women, ICTs and communication exist but there are insufficient studies. With regard to technology and communication, Morna and Khan points out that African women have their own special needs due to the fact that they reside in developing worlds and Africa in particular. Therefore, there is need for more studies, specifically focussing on African women and ICTs.

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APPENDICES

APPENDIX 1: Questionnaire

SECTION A

1. Age of the respondent
 - a) Below 25 years []
 - b) Between 25 and 34 years []
 - c) Between 35 and 44 years []
 - d) Above 45 years []
2. Sex of the respondent
 - a) Male []
 - b) Female []
3. Sector in which you are employed
 - a) Private sector []
 - b) Public sector []
4. Level of education
 - a) University education []
 - b) College education []
 - c) Secondary education []
 - d) Primary education []
 - e) No formal education []

SECTION B

5. Do you have a radio?
 - a) Yes []
 - b) No []

If no, proceed to question 8.
6. What programmes do you often listen to on the radio?
 - a) News e.g. Local, regional & international news []
 - b) Education e.g. adult literacy programmes []
 - c) Health, e.g. nutrition, self care, disease prevention and treatment, hygiene []
 - d) Agriculture, e.g. Sustainable farming practices, post harvest technologies, markets & market prices []
 - e) Gender issues, e.g. Gender equality, women's empowerment, Gender Based Violence, gender discrimination []
 - f) Good governance, e.g. Voter education, human rights issues, legal issues, transparency & accountability, good leadership, corruption, campaigns []
 - g) Environment, e.g. Weather forecast, environmental conservation and management []
 - h) Water and sanitation, e.g. , safe water, disposal of wastes products []
 - i) Entertainment, e.g. Listen to music, plays & sketches []
 - j) Other (s), please specify.....
7. In what language do you listen to these programmes?
 - a) English []
 - b) Bemba []
 - c) Nyanja/Chewa []
 - d) Lozi []
 - e) Tonga []

- f) Kaonde []
 - g) Luvale []
 - h) Other (s), please specify.....
8. Do you have a television?
- a) Yes []
 - b) No []
- If no, proceed to question 11.***
9. What kind of television programmes do you watch?
- a) News e.g. Local, regional & international news []
 - b) Education e.g. adult literacy programmes []
 - c) Health, e.g. nutrition, self care, disease prevention and treatment, hygiene []
 - d) Agriculture, e.g. Sustainable farming practices, post harvest technologies, markets & market prices []
 - e) Gender issues, e.g. Gender equality, women's empowerment, Gender Based Violence, gender discrimination []
 - f) Good governance, e.g. Voter education, human rights issues, legal issues, transparency & accountability, good leadership, corruption, campaigns []
 - g) Environment, e.g. Weather forecast, environmental conservation and management []
 - h) Water and sanitation, e.g. , safe water, disposal of wastes products []
 - i) Entertainment, e.g. music, plays & sketches []
 - j) Other (s), please specify.....
10. In what language do you watch these programmes?
- a) English []
 - b) Bemba []
 - c) Nyanja/Chewa []
 - d) Lozi []
 - e) Tonga []
 - f) Kaonde []
 - g) Luvale []
 - h) Other (s), specify.....
11. Do you have a computer?
- a) Yes []
 - b) No []
- If no, proceed to question 14.***
12. What do you use a computer for?
- a) Working []
 - b) Educational purposes []
 - c) Store and exchange health information []
 - d) Store and exchange agricultural information []
 - e) Store and exchange information on gender issues []
 - f) Store and exchange information on good governance []
 - g) Store and exchange information on water and sanitation []
 - h) Entertainment []
 - i) Other (s), please specify.....
13. In what language do you store and exchange information using the computer?
- a) English []
 - b) Bemba []
 - c) Nyanja/Chewa []
 - d) Lozi []
 - e) Tonga []
 - f) Kaonde []
 - g) Luvale []
 - h) Other (s), specify.....

14. Do you use Internet?
a) Yes []
b) No []

If no, proceed to question 17.

15. What do you use the Internet for?
a) To read news e.g. local news, regional news, international news []
b) E-mail []
c) Seeking educational information []
d) Seeking health information []
e) Seeking agricultural information []
f) Seeking information on gender issues []
g) Seeking information on good governance []
h) Seeking environmental information []
i) Seeking information on water and sanitation []
j) Entertainment []
k) Other (s), please specify.....

16. In what language do you search for information on the Internet?
i) English []
j) Bemba []
k) Nyanja/Chewa []
l) Lozi []
m) Tonga []
n) Kaonde []
o) Luvale []
p) Other (s), specify.....

17. Do you have a landline phone?
a) Yes []
b) No []

If no, proceed to question 20.

18. What do you use a landline phone for?
a) In times of emergencies and danger []
b) Source for educational information []
c) Source for health information []
d) Source for agricultural information []
e) Source for information on gender issues []
f) Source for information on good governance []
g) Source for environmental information []
h) Source for information on water and sanitation []
i) Other (s), please specify.....

19. In what language do you communicate on the land phone?
a) English []
b) Bemba []
c) Nyanja/Chewa []
d) Lozi []
e) Tonga []
f) Kaonde []
g) Luvale []
h) Other (s), specify.....

20. Do you have a mobile phone?
a) Yes
b) No

If no, proceed to question 23.

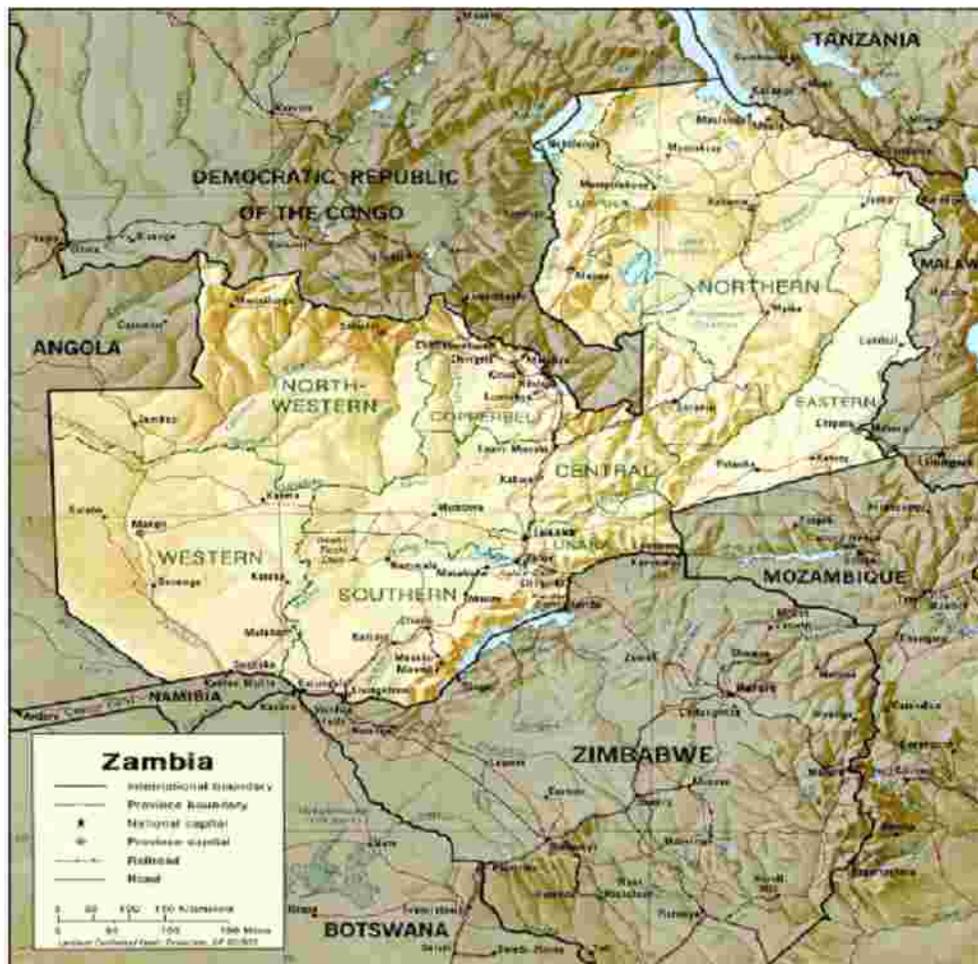
21. What do you use a mobile phone for?

- a) To read news []
 - b) E-mail []
 - c) In times of emergencies and danger []
 - d) Source for educational information []
 - e) Source for health information []
 - f) Source for agricultural information []
 - g) Source for information on gender issues []
 - h) Source for information on good governance []
 - i) Source for environmental information []
 - j) Source for information on water and sanitation []
 - k) Entertainment []
 - l) Other (s), please specify.....
22. In what language do you communicate on the mobile phone ?
- i) English []
 - j) Bemba []
 - k) Nyanja/Chewa []
 - l) Lozi []
 - m) Tonga []
 - n) Kaonde []
 - o) Luvale []
 - p) Other (s), specify.....
23. In general, what obstacles do you face to use ICTs (e. . Internet, computers, radio, television, land phone and mobile phones)?
- a) Lack of relevant content []
 - b) Language barrier []
 - c) Limited connectivity []
 - d) High costs of equipment, maintenance and connectivity []
 - e) Limited knowledge and skills for using ICTs []
 - f) Long distance from which to access ICTs discourages me []
 - g) Marginalisation by gender []
 - h) Inadequate time []
24. Apart from the radio, television, computer, Internet land phone and mobile phone, what other sources do you use to access information?
- a) Libraries or information centres []
 - b) Friends and families []
 - c) Print Newspapers []
 - d) Church []
 - e) Women's groups []
 - f) Other (s), please specify.....
25. How important is it for you to access development information? (N.B. Development information is information that is required or used for or in development e.g. information on health, education, agriculture, environment, good governance, water and sanitation, e.t.c.).
- a) Very important []
 - b) Fairly important []
 - c) Neither important nor unimportant []
 - d) Not all important []
 - e) Don't know/cant say []
26. How important is it for you to have access to ICTs? (e.g. Internet, computers, radio, television, land phone and mobile phones)?
- a) Very important []
 - b) Fairly important []
 - c) Neither important nor unimportant []
 - d) Not all important []
 - e) Don't know/cant say []

APPENDIX 2: Situation Analysis of Zambia

Geography and population

Zambia is a land-locked country located in the Southern part of Africa covering a total surface area of 752,614 sq km. With a population of approximately 11, 798, 678, the country's population growth rate and fertility rate stand at 2.9% and 5.9% respectively, (Republic of Zambia, 2006). Women comprise 51% of the population, (CRSP, 2006). While the official language is English, Zambia's main spoken local languages include Bemba, Nyanja/Chewa, Tonga, Lozi, Kaonde and Luvale.



Source: Fiedler-Conradi, S. (2003)

Political

Zambia gained its political independence on 24th October, 1964 from British colonial rule. From 1964 to 1991, the country was governed by one party. In 1991, there was a transition from one party state to multi-party democracy, which is still the case today. The participation of women in politics and indeed in decision making bodies since independence has been negligible due to a number of factors, such as the varying traditions and customary laws, low levels of education, limited access and control over resources, and the division of labour, (Fiedler-Conradi, 2003). Though statistics show a slight improvement of female representation in parliament from 6.7% in 1964 to 12.1% in 2005, it has been at a slow pace. For example, out of 21 Cabinet Ministers in 2006, only 5 were females. Table 1 below gives details on how women have fared in politics since independence.

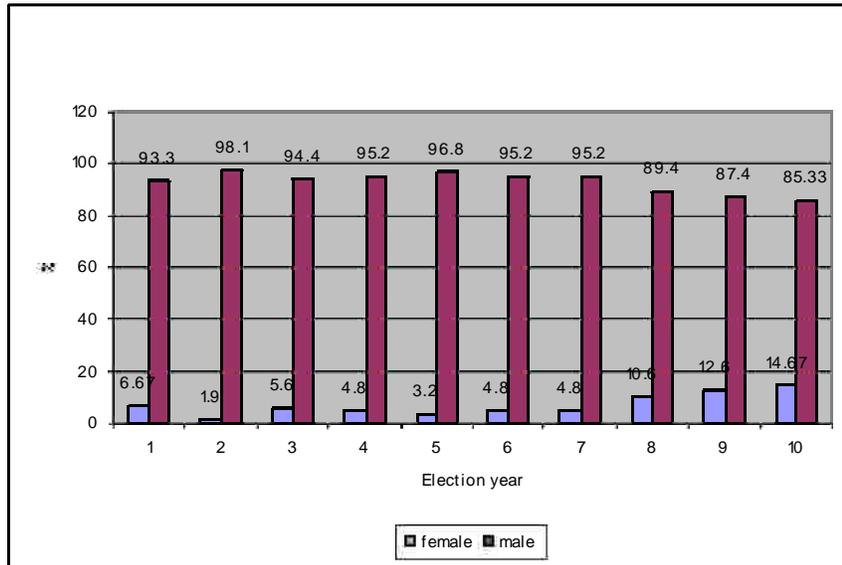
Table 1: Composition of elected women MPs since 1964

Election year	No. of female MPs	%	No. of male MPs	%	Total elective seats	Progress rate for women (%)
1964	5	6.67	70	93.30	75	
1968	2	1.90	103	98.10	105	-71.51
1973	7	5.60	118	94.40	125	194.74
1978	6	4.80	119	95.20	125	-14.29
1983	4	3.20	124	96.80	125	-33.33
1988	6	4.80	119	95.20	125	50.00
1991	6	4.80	119	95.20	125	0.00
1996	16	10.60	134	89.40	150	120.83
2001	19	12.60	131	87.40	150	18.87
2006	22	14.67	128	85.33	150	16.43

Source: Kambikambi, (2007)

When compared to men, women’s participation in politic from 1964 to date is far much lower than that of men. This reflected in figure below.

Figure 1: Composition of elected MPs by sex, 1964 – 2006



Source: Kambikambi, (2007)

Again, female representations in the public sector have been unsatisfactory with only 25% permanent secretary, 23% director, 18% deputy director, 21% assistant director and 42% diplomatic staff- 42% (Republic of Zambia State house, 2006).

Economy

At 44%, Zambia is one of the highly urbanized countries in sub-Saharan Africa. Half of the country's population lives in urban areas while rural areas are sparsely populated. The country’s Gross Domestic Product (GDP) based on Purchasing Power Parity (PPP) stands at \$10.9billion, with an annual growth rate at 6% and its GDP per capita at \$900, (HDI, 2006).

Once a middle-income country, Zambia ranks low in the Human Development Index, at 165 out of 177 countries. The major contributing factor towards this low ranking is high levels of poverty. About 73% percent of Zambians live below national poverty

line, with rural poverty rates standing at about 83% and urban rates of 56%, (Ibid). Women are the poorest at 70% lacking healthcare, food, productive resources, education and other basic necessities compared to 57% of men, (United Nations ICT Task Force, 2003). Maternal mortality continues to rise at an alarming rate, from 649 deaths per 100,000 live births in 1996 to 729 deaths per 100,000 births in 2002, (Civil Society for Poverty Reduction, 2006). Child mortality rates are also high due to increased child hunger, poverty and malnutrition. Life expectancy at birth is 37 years, (Fiedler-Conradi, 2003). Women's illiteracy rates stand at 75% compared to 65% of men, (Republic of Zambia, 2006).

Zambia's poor economic performance is further exacerbated by HIV/AIDS pandemic with the national prevalence rates of 16% among adults aged between 15 to 45 years. The prevalence rates are higher in urban areas (23%) than rural areas (11%), (UN ICT Task Force, 2003). Again, women have a higher HIV infection rate at 18% compared to 13% that of men. Approximately 25% of women between the ages of 25-29 are positive compared to 15% of men. Similarly, Approximately 8% compared to 17% of girls between 15 to 24 years old are infected and 40% of infants are born with HIV by infected parents, (Republic of Zambia, 2006). Apart from AIDS, women are also vulnerable to other major diseases such as malaria, tuberculosis, diarrhoea, pneumonia and other avertable infections.

To meaningfully address the enormity of the social and economic challenges facing the country, the government among other things, as evinced from its national ICT policy, recognises the importance of harnessing ICTs and indeed information to rectify its social and economic challenges.

Zambia's current ICT situation

Zambia's ICT sector comprises four sub sectors: telecommunications, Computing/Information Technology, Media especially radio and television broadcasting, and the postal communication system, (Republic of Zambia, 2005). The telecommunication sub sector encompasses the traditional fixed telephony and mobile communications based on the Global System for Mobile (GSM) communication standard. It also includes the Internet Service Providers, equipment

installation and other services. While the IT sub sector mainly comprise of businesses involved in office automation and networking solutions such as supply and installation of computers and networks, system vending, end user training, and distributorship. ZAMPOST is the major category of the postal communication system. Whereas radio and Television are the major categories of the media sub sector, (Ibid).

Traditional fixed telephony: Over the years, there has been a decline in fixed line teledensity, from 76,000 in 1995 to 85,000 in 2000, (Hassler, 2002). This is partly due to higher installation costs and the increase in mobile phones. The Public Switched Telephone Network (PSTN) is operated by the Zambia Telecommunications (ZAMTEL) company with a network consisting of 70% digital and 30% analogue switches, (Pothmann, 2005). Many of the areas are linked by analogue transmission network mainly based on microwave technology. However, the cities such as Lusaka and Copperbelt are linked by broadband digital microwave network while small and medium sized towns including many of the rural areas are linked by light microwave network. In some remote communities with no wireless, Wireless Local Loops have been set up, (Ibid).

Mobile telephony: Over the years, the country has witnessed an exponential growth in ownership and use of mobile technology (approximated at 73% between 2002 and 2003, (Republic of Zambia, 2006), thereby extending to even the most ordinary people in the country. There were over 970,000 active mobile subscribers on all the three networks as of December, 2005 with the network coverage for the districts at 80%, (Ibid). Currently, are three mobile (cellular) service providers in Zambia. These include: Celtel (owned by a UK based MSI Investment); MTN (formerly known as Telecel Zambia. With 30% of its shares locally owned, telecel is a subsidiary of a U.S based company Telecel International Ltd and the Egyptian conglomerate Orascom); and Cell Z (operated by ZAMTEL), (Ibid).

Internet Service Providers (ISP): Apart from South Africa, Zambia was the first country in Sub Saharan Africa to introduce Internet access. Currently, Internet technology providers predominantly private include; ZAMNET (which is the pioneer in the provision of internet services in Zambia); Coppernet; ZAMTEL online (a

branch of Zamtel); Uunet; Microlink, and Africonnect, (Republic of Zambia, 2005). These service providers offer both broadband and dial services. The total internet subscribers as at end December 2005 were 16,981 compared to 16,288 in the previous year. The number of users as opposed to subscribers is estimated at more than 20 times the number of subscribers (339,620), (Ibid).

Radio: Radio continues to be popular among the Zambians despite being an old technology. Currently, there are more than 20 licensed radio stations operating in Zambia, including the three state owned Zambia National Broadcasting Corporation (ZNBC) channels: the British Broadcasting Corporation (BBC) with two frequencies (Lusaka and Kitwe), and Radio France International. The radio reception for ZNBC covers all parts of the country with short wave signals, while the provincial centres, the Copperbelt and Lusaka have FM radio reception, covering a radius of up to 100 km from these centres.

Television: Television remains largely an urban medium in Zambia, although more recently most of the areas along the line of rail including six provincial centres have been catered by the state-owned ZNBC-TV. There has been an increase in the number of television providers in the country. These include private pay television service providers such as Cable Satellite Technologies (CASAT) Limited, and the Trinity Broadcasting Network (TBN), and Multi-Choice Zambia.

Table 3: ICT Infrastructure Indicators, 2005

Fixed line subscribers (2004)	91.7 per 1000 persons
Mobile Subscribers (2004)	464 per 1000 persons
Dial-up subscribers (2004)	16.5 per 1000 persons
Broadband subscribers (2004)	0.023 per 1000 persons
Internet users (2004)	231.0 per 1000 persons
Television broadcast stations (2002)	9
Radio stations (2001)	AM 19 , FM 5 , Shortwave 4

Source: World Telecommunications Development Report 2006, ITU.

Recognising the need to harness ICTs for social, political and economic prosperity, the Zambian government launched its National ICT policy in March, 2007 whose vision is “A Zambia transformed into an information and knowledge-based society and economy supported by consistent development and pervasive access to ICTs by all citizens by 2030,” (Republic of Zambia, 2005:20).

The policy consists of 13 pillars. With special reference to women, the national ICT policy includes a pillar that specifically addresses youth and women under one umbrella section. Under this section, the policy recognizes that improved information access and dissemination; efficient operations; access to education and health; equitable participation in social, political and economic spheres; and breaking the barriers of isolation as some of the key ICT benefits that can accrue to women and youth. Thus the policy recognizes the importance of involving women who are marginalized and yet constitute the majority of the population in Zambia in ICT diffusion, application and use in the development process. The national ICT policy equally recognizes under this pillar the importance of information access and dissemination as some of the key empowerment tools.