PERSPECTIVES ON THE ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTs) IN PROFESSIONAL WOMEN'S ACCESS TO DEVELOPMENT INFORMATION IN ZAMBIA

By

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Abstract
Information and Communication Technologies (ICTs) have the potential to provide the much-needed development information. In particular, ICTs can facilitate access to development information for professional women in order to increase their productivity, efficiency and incomes. Although much has been documented about gender and ICTs, few studies have closely reviewed the literature regarding the link between ICTs, women and development information. This paper provides a critical review of studies investigating ICTs and their role in making development information available to professional women in Zambia.

1.0   Introduction

Information and Communication Technologies (ICTs) facilitate access to the vital development information needs of women in the developing world. While a number of studies have examined the relationship between gender and ICTs, few have investigated the link between ICTs, women and development information. Although accounting for half the world's population, women are generally excluded from participating in development plans and policies. Women need access to development information including health, education, agriculture, environment, good governance, and water and sanitation. Access to information is critical for women who form the majority of the population in many regions and are key players in the development process.

Thas et al. (2007) notes a lack of comprehensive surveys that document women's use of ICTs in developing countries. This clearly demonstrates the need for more surveys to be conducted on uses women make of ICTs. Morna and Khan, (2000) also observe the wide gap between research and action and therefore, call for more studies to be conducted focussing specifically on African women and technology needs. This paper critically reviews studies that have addressed issues of the information needs of women in developing countries and ICTs. Using a framework of information needs proposed by Kenney (1995), the role of ICTs in addressing those needs is presented.

2.0   Information and Development

Distance and time are no longer obstacles to information access. Information can be generated, processed, accessed, used, acquired, retrieved, transmitted and disseminated across the global with greater speed than ever before using Information and Communication Technologies (ICTs).   ICTs have made it much easier and cheaper to disseminate, access, share, exchange and communicate information. Hill (2001) states, "Information needs no passport to cross national borders" (8). The ease

with which information can be accessed, shared, disseminated and communicated allows information to be potentially available anywhere at any time to anyone.

Information and communication play an important role in economic, social, political and cultural development (Karelse and Sylla, 2000). Information is a prerequisite for individuals to make informed social, political and economic decisions and actions at individual, institutional, national and global levels. Information has the potential to address three primary concerns of development: poverty, disease and ignorance. ICTs provide access to vital information that is needed in order to address these obstacles to development.

"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 and knowledge are basic resources (Fors and Moreno, 2001); like food, air and other necessities of life, without them individuals cannot perform well (Rasmussen, 2001) and it is impossible for any sector or economic activity to function effectively (Yumba, 2002). 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. Yumba (2002) claims that information is an essential ingredient in the socio-economic development process of any society. He contends that the power of information and its applicability in every human activity is so decisive that economic resources such as land, labour and capital appear to be losing their value. Mchombu (2003), however, maintains that information is just a new factor of production that is critical in human development, comparable to traditional production of land, labour and capital. He believes that the potential value of information in underdeveloped countries has not yet been realised. Because information is accorded a low status, one of the reasons for underdevelopment is due to lack of reliable and timely information to support development planning, programming, implementation and evaluation. He states, "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).

Information 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.

Rasmussen (2001) alleges that the crucial role of information in development is based upon three premises. First, prospective consumers of information are able to make realistic options based upon cost-benefit analysis or related coherent processes. This suggests that information should enable users to critically examine issues and make informed choices, actions and decisions. Second, ideal information is readily available. For information to have a desired effect, it must be the right information provided at the right time and in a desired form. Third, there is no cost involved in accessing information. Information must be available at almost no cost to all who

need it. ICTs promote these premises by making available a 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.

Rasmussen (2001) identified five aspects of development to which information can contribute including: social and democratic development; cultural enrichment; education and research; micro-economic development; and macro-economic development. Albright (2005) found positive effects of information on economic and social development in addition to political and cultural change.

Kenney (1995) observed that information is often one of the missing components in some development strategies. He outlined the factors of a development strategy as including health, education and environment, good governance, freedom and respect for human rights, and wealth (Figure 1). Each of these factors is described below.
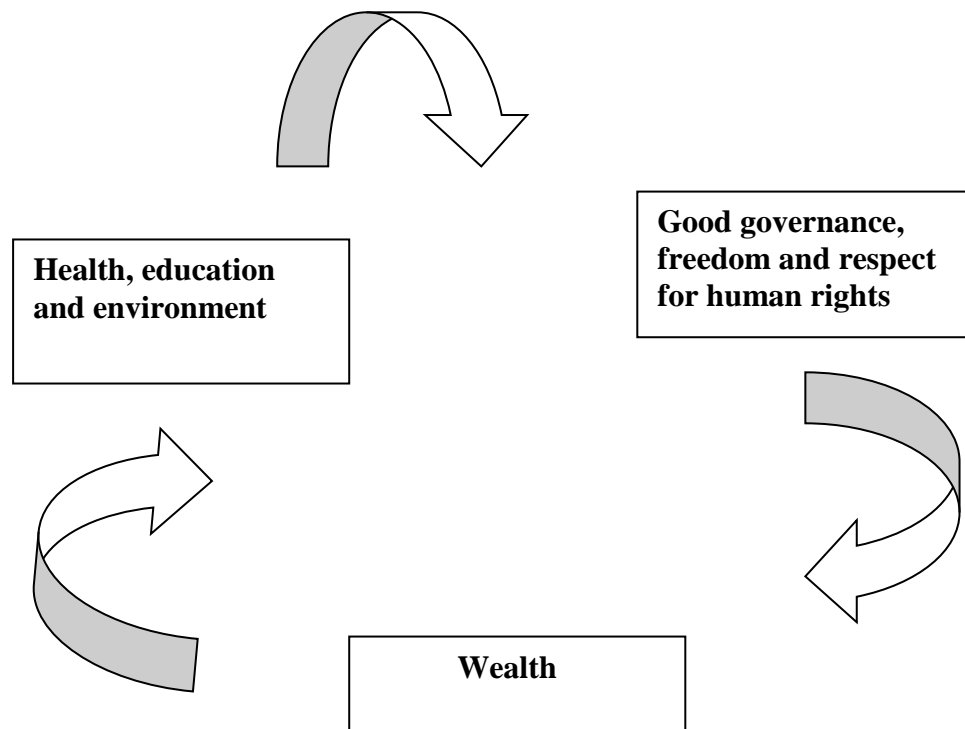

Health, education and environment

Good governance, freedom and respect for human rights

Wealth

Figure 1: Based on Kenney (1995)

2.1 Health, Education and Environment

Sustainable socio-economic development in any country requires a healthy and educated populace (Kenney, 1995). Information enables individuals to learn how to take preventive measures against diseases and improve their health and quality of life. The costs of healthcare are increased when people get sick and have to be treated; prevention is less costly overall. Information is useful in prevention and leads to a healthier 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 costly curative solutions than prevention against disease" (Bartle, 2007). Raising the awareness of potential health problems significantly improves the health of individuals in society, reduces costs, and increases economic productivity.

Similarly, information is critical in ensuring an informed and educated populace in any society. For the reason that developed countries are rich in information, their citizens are well informed about their social, cultural, political and economic environments. Societies that are well-versed adjust promptly to varying social and economic situations; thus, they find ways in which to overcome developmental challenges such as poverty (The Republic of Zambia, 2005).

Information enables individuals to gain knowledge of available options or opportunities and the risks involved in taking those options. Information and education increase levels of economic productivity and enable individuals to gain knowledge, skills, self confidence and opportunities, lowers the birth rate while decreasing child and maternal mortality rates, increases life expectancy, and generates income. The United Nations Economic Commission for Africa (UNECA) states, "Information is life" (UNECA, 1999: 2).

While human health requires a healthy social environment, it also requires a healthy natural environment. Information is an indispensable resource that raises awareness and changes people's attitudes towards their environment. It 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). Productivity and the generation of wealth are dependent upon improvements in health, education, and the environment.

2.2 *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 implies the formulation of good policies that address mobilization and include the involvement of all stakeholders (Kenney, 1995). Information sharing between those in power and the governed is imperative. The information flow between the governing and the governed is vital in promoting the equitable participation, involvement and mobilisation of all stakeholders. Information is necessary for the design of policies and plans, which should consider the needs of the people 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. Corruption and mismanagement are less likely to occur if there is proper information flow between the government and the governed.

Good governance goes hand in hand with basic human freedom and rights. Ochieng (1999) suggests 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. Ochieng purports that without information governments and individuals cannot be held accountable for their actions. Consequently, they are able to commit violations with impunity. Such violations are common in many African societies and suggest that many people, particularly women, lack this fundamental basic human right.

2.3   Wealth
Information and knowledge are prerequisite for wealth creation (Republic of Zambia, 2005).   Information (e.g., scientific and technical information) about available resources and the means to utilize them is critical in order for individuals to know how to create wealth, control exploitation, and make informed decisions.

3.0   The Role of Women in Development
Women play a significant role in the development process. They comprise more than half of the workforce in many regions (Reddock, 2000). Recognising and affirming women's importance in development, the Committee for Economic Development (CED) (2003) states, "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" (2).

Women play three significant roles in society: productive, reproductive and socio-political roles (Touwen, 1996). As producers of food, women form the backbone of the world's agricultural labour force (CED, 2003). They constitute the majority of workers in food production. Specifically, 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).

Food processing for household consumption and marketing, which is a time and labour consuming task is largely performed by women in many regions. Women are also 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.

Women also 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, poorer health, and lack of training. Consequently, they tend to be lowly paid and underrepresented in low wage positions (Ibid).

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 proportion of the labour pool. 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 particular activities.

The reproductive role of women is perhaps one of the important areas of women's contributions to the development of any society. Through childbirth, human resources are produced; the leaders of tomorrow and the future generation. Women are primarily responsible for nurturing children, often in large numbers in many African countries from childhood to responsible adult. This is a primary reason, however, why women seldom find time to work in paid jobs. The responsibility of parenting 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.

Women, especially in African countries, are largely responsible for gathering energy for cooking and heating, and fetching water for 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 is also a time and labour consuming task (Booth and Protais, 2000; CED, 2003; Huyer, 2004).

Women constitute the majority of the electorate, due, in part, 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.

Considering the range of women's work - productive, reproductive and socio-political, one can arguably claim that women's economic contribution is vital to future generations and the economy. 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

constitute the majority of the illiterate and are more vulnerable to major diseases such as HIV/AIDS, tuberculosis and malaria in many developing countries. Women remain the silent majority with limited power in economic decision making bodies. Given the opportunity, women's contributions to the overall development process could increase substantially (CED, 2003). ICTs are necessary for women's access to the vital development information that will allow them to create efficiencies and build an income.

4.0   Women's Information Needs

There are different types of information needs. Dasgupta (2001) suggests three categories including 1) a need for traditional information; 2) a need for personal information, and 3) a need for development oriented information. 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).

For Momo (2000) women's information needs are recognised in practically all spheres of social life as outlined in Table 1.

Urbis Keys Young (2002), however, suggests that women's information needs are ever-changing, as reflected in changes in personal, financial, social and family circumstances; their information needs and information-seeking behaviour is, therefore, highly situational and often determined by such factors as age, socio-economic status, level of education, family circumstances and ethnicity among other things.

Olorunda (2004) adds that women's information needs vary and include personal, health, financial, spiritual, professional, and economic. Since women need to sustain themselves and their families, they require information concerning their social and economic environments. Their information needs for development information, including economics, inadvertently facilitate socio-economic and political development.

Table 1: Women's Information Needs (based upon Momo, 2000)

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

5.0 The Role of ICTs in Enabling Access to Development Information

Olorunda (2004) suggests that "education, knowledge, information and communication are at the core of human progress, endeavour and well-being" (5). Therefore, women's information needs involve not only education and training, communication, and information but also require access and use of ICTs, awareness of the information society, 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 to the development of technology.

Numerous studies demonstrate that ICTs can contribute to the development information needs of individuals, particularly women. Gerster and Zimmeermann (2003) identify four key features of ICTs. Because ICTs are two-way communication technologies, they provide instantaneous transmission of information to and from individuals, organisations, and nations at large. ICTs are permanently available, freeing individuals from the limits of time and location to access and use ICTs. ICTs have a global reach; that is, they can be accessed and used from anywhere in the world by anyone regardless of colour, race, sex, class, culture, religion, or language (Munyua, 2000), thereby reducing the world into McLuhan's (1967) notion of a global village. Finally, ICTs are inexpensive. Many ICTs provide an easy and cheap way to generate, access, store, disseminate, transmit, and communicate large amounts of information worldwide for very little cost (Yumba, 2002).

The role of ICTs in addressing the development information needs in each of the areas for sustainable development identified in Kenney's framework including health, education, agriculture, good governance, environment and water and sanitation is described below.

5.1 Health

The World Health Organisation alleges that 40% of health is exchanging information (Morna and Khan, 2000). Many health problems, especially in developing countries, could be improved with access to timely and accurate information (World Bank, 2000; Fors and Moreno, 2001) and better communication (Morna and Khan, 2000). Training materials are often out of date with individuals, particularly women, having limited access to the latest information on new drugs or preventive treatments including appropriate expertise for accurate diagnosis. ICTs provide 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 helps to improve the quality of life, addressing issues such as a shortage of current health information and the isolation of health professionals (Fors and Moreno, 2001). ICTs offer immense opportunities to enhance human health, hygiene and nutrition thereby enabling individuals to live longer and healthier lives (ITU, 2006b). Individuals in distant places that cannot easily access hospitals or medical services, can be supported by telemedicine and digitized health information, thus assisting millions of people improve their every day life (Ibid).

In Sub-Saharan Africa, with high rates of HIV/AIDS (especially among women), ICTs present an unprecedented opportunity to combat the disease along with other major diseases like tuberculosis 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) can be made known to those infected, affected, and those working on the problem.

5.2   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 can benefit directly through access to educational information made available through ICTs that will enhance their educational and literacy skills, thereby bridging the educational divides and the wider global digital gap.

ICTs also have the potential to enhance women's education opportunities in other areas of skill, work and life. Greenberg (2005) points out that ICTs such as radio, television, computers and the Internet, have proven to be valuable in other 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 to support life long learning, which is crucial for women's economic well-being. Kirkup (2002), points out that 'multiversity,' a term that suggests a collective body of knowledge or a diverse body of students, has gained popularity in recent years among digital learning providers. Women can use ICTs to advance their education in the "multiversity"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 often find it difficult to leave their family responsibilities to further their schooling and education elsewhere can take advantage of the flexibility offered through virtual learning using ICTs. Rather than being confined to one 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, people and intellectual

tools, and promotes communication and collaboration between teachers and students (Ibid). ICTs are also useful 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).

5.3 Agriculture

Both older (e.g., radio, television) and newer ICTs (e.g., Internet and mobile phones) are requisite in providing women with access to reliable and comprehensive agricultural information (Munyua, 2000) to empower themselves in agricultural decision making, to 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. Women can use ICTs to access and share vital information on agricultural inputs (e.g., fertilisers, pesticides, seeds), 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 and sustainable agricultural approaches (Munyua, 2000; McNamara, 2003).

ICTs have the potential to improve access to agricultural information on soils, hydrology, rainfall and improved socio-economic value ratings, communication and utilities to support decision making and planning at various administrative levels in the agricultural sector (IDRC, 2003). 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 (World Bank, 2000).

One particular form of ICTs, Geographic Information Systems (GIS), can contribute to overcoming distances in agricultural data collection (Dube et al, 1994). GIS is defined as

> a computer system capable of capturing, storing, analyzing, and displaying geographically referenced information; that is, data identified according to location. Practitioners also define a GIS as including the procedures, operating personnel, and spatial data that go into the system (USGS, 2007).

GIS enables farmers to identify suitable sites, agriculturally potential areas, and in the analysis preparation of crop plan.

5.4 Good governance

ICTs provide a 'democratisation of access to information' which enables all governance actors, including women, to publish, access, receive and exchange information and communication about development. ICTs also open up enormous possibilities for improving social and economic dialogue between government authorities and the populations they serve (Women's Net, 2004). The elements of

good governance include participation, transparency, accountability, rule of law, efficiency and effectiveness, responsiveness, consensus orientation and equity.

Full participation of all citizens, both men and women, is the best way to build and sustain democracies, reduce conflict and achieve human development (Women's Net, 2004). Through linking political and social dialogue, ICTs have the potential to promote women's participation in the democratic process. ICTs play a fundamental role by reducing the barriers to participation through provision and access to meaningful and accurate information about governance issues including civic information and the electoral process. 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, driven by the rule of law rather than the rule of man, creating a just, effective and efficient society for the benefit of everybody in society (Women's Net, 2004). Governments can use ICTs to efficiently and effectively deliver services to the public. Information on civil, social, and political rights are essential for 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, and is now accessible through the use of ICTs (Rasmussen, 2001).

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

5.5   Environment
Biological resources are under severe strain, particularly in less developed regions. Many habitats and ecosystems are being destroyed, decreasing the natural regenerative and buffering capacity of the natural resource base (ITU, 2006a). ICTs have made it easier and faster to collect, distribute, and analyze environmental information and data from a wide range of 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 for global policy makers, allowing them to effectively address urgent problems through environmentally friendly common action (Ibid).

ICTs have increased the rate at which information can be shared between individuals regarding proper management of the social, natural, and cultural environment, including natural resource preservation and conservation for sustainability purposes (ITU, 2006a). They have lead to increased awareness of the need for production processes that conserve, restore and positively affect the stability and diversity of

biological resources. ICTs enable individuals to access information that is essential for averting natural disasters, environmental degradation and desertification, ozone depletion, global warming, depleted supplies of fresh water and promote sustainable land management, (McNamara, 2003).

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

## 6.0	Gender Differentials and Barriers in Access and Use of ICTs
Research studies have suggested that there are fewer women than men utilising ICTs. Marcelle (2000) reveals that 64% of men dominate the computer/internet use in Zambia. Primo (2003) and Zulu (2004) claim that women are often at a disadvantage due to technophobia, where technology is seen as tools for men only. Girls are not encouraged to study science and technology in school, a trend which later results in fewer women in these occupations (Primo, 2003). Rathgeber (2000) alleges that the disadvantaged status of women has nothing to do with male dominance in use of technology, nor in the inappropriate design of technologies; rather, women themselves choose not to interact with technology. Karelse and Sylla (2000) believe that women simply lack interest in ICTs because of the sociocultural environment on their activities. While these barriers to ICTs exist for women, Zimmermann and Gerster, (2003) remind us of three antecedents to information use: (1) connectivity (i.e., is access available); (2) affordability (i.e., is access affordable); and (3) capability (i.e., do potential users have the skills required for access). "The users' skills relates to technical abilities, language and literacy" (Ibid, 4).

## 7.0	Conclusion
The literature demonstrates the importance of women to have access to development information and ICTs. 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; Olorunda, 2004). Understanding the information needs of women largely depends upon identifying the kind of information women use in their daily lives. A better understanding of how women use information can also help in designing appropriate technology for fulfilling these needs. Even fewer studies have been conducted on the relationship between information and development (Momo, 2000) including the relationship 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.

8.0   Future Research

There are a number of possible areas for future research based upon the literature review including women's information needs, women's access to appropriate information, and the information seeking behaviour of women with diverse situations and backgrounds.

There is also a 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 (Adeya, 2003). The impact of ICTs also needs to be analysed using both quantitative and 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.
Additional areas for future research include the link between poverty and ICTs, technical problems women encounter in their use of ICTs, the 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, and cultural values and ICTs (Adeya, 2003).

There is a need for action research on women, ICTs, and development information (Morna and Khan, 2000). African women, in particular, have their own special requirements due to the fact that most countries in Africa are classified as developing nations. Therefore, there is need for more studies, specifically focussing on African women and ICTs.

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