THE ROLE OF ICTS IN POVERTY REDUCTION AMONG PEASANT FEMALE FARMERS IN SELECTED RURAL AREAS OF KABWE AND KAPIRI MPOSHI DISTRICTS, CENTRAL PROVINCE, ZAMBIA

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Abstract- The study sought to establish the role of Information and Communication Technology (ICTs) in poverty reduction among rural women who are engaged in peasant farming activities. The study was conducted in selected rural areas of Kabwe (Mpima farmimg block) and Kapiri-Mposhi (Mondake and Mukochi farming blocks) Districts, central province, Zambia. A survey research design was employed in the study. The target population was women involved in peasant farming business in rural areas of Kabwe and Kapiri-Mposhi districts. A total of 50 women were drawn as a sample population in this study. Questionnaires and scheduled interviews were used to collect quantitative and qualitative data respectively from respondents. Quantitative data was analyzed using excel and Statistical Package for Social Sciences (SPSS) in order to generate frequencies and graphs for easy interpretation and analysis of data. On the other hand, thematic analysis was used to analyze qualitative data that emerged from research objectives, themes and subthemes. The findings of the study revealed that ICTs play a critical role in helping rural women reduce poverty levels through their agricultural activities. Despite such a positive effect ICTs have on poverty reduction, most women in rural Kabwe and Kapiri-Mposhi lacked ICT facilities that could have being of help for them to access agricultural information and market their produce. The findings further indicated that the commonest ICT gadget which rural women relied on for communication was a phone. The availability of the phones did not help much because they did not have internet facilities and it was expensive to maintain. Additionally the agricultural policies that government had put in place to encourage rural women access ICTs were too technical to be understood by an ordinary and illiterate female farmer. Based on the findings of the study, the following among many other recommendations emerged: 1. ZICTA should strengthen ICTs in local primary and secondary schools in order to eradicate the problem of technical support as it can be seen in the local community that most women are illiterate in the area of information technology. 2. Government through Ministry of Agriculture should provide telecenters that are tailored to support community development in rural areas so that even women without computer devises can access technical support whenever they need. 3. The private sector should be encouraged to invest in the design of ICTs appropriate for use in rural areas.

Key Words- Peasant female farmers, ICTs and Poverty Reduction

I. BACKGROUND OF THE STUDY

Kimani and Kombo (2009) stated that poverty is a dehumanizing condition for everyone as it erodes human rights of the affected. Poverty subjects an individual to a state of powerlessness, hopelessness, and lack of self-esteem, confidence, and integrity, leading to a situation of multidimensional vulnerability. Unless there are realistic and workable interventions to redress the situation, there develops a vicious circle of poverty where it is inherited from one generation to the other in households, communities and the nation. As many people in developing countries are poor with the women bearing the blunt of it, reducing its impact as well as breaking its vicious circle requires a concerted effort and a gender perspective in ensuring all inclusive interventions and strategies.

Most African governments have realized the importance of prioritizing equality of opportunities for the rural women and men in enhancing development in order to ensure viability and sustainability of rural development. This effort to eradicate and reduce poverty by most governments was manifested by the adoption of the Millennium Development Goals, especially number one, on the eradication of poverty to less than 30% of the countries' population by 2015.

Empowering women in rural development agenda maximizes human resources in maintaining the social fabric of rural communities and revitalizing local economies. Rural communities especially those that depend on Agriculture have been affected by globalization as well as an increased emphasis on technology. Africare (2015) writes in its magazine Agriculture and Food Security that 80% of the African farms are small plots run by rural farmers who have problems in producing and selling crops besides having large areas of soil that are nutrient and rain deficient in addition to having scarce access to technology and credit facilities.

A study conducted in Pakistan to determine appropriate technologies for rural women revealed that most women are engaged in subsistence agriculture but the major hurdle was seclusion from most economic activities and the inferior status where they could neither travel independently nor own property without consent from their male

counterparts. The study concluded that women in rural areas needed to be supported with market roads, farm technologies training schools, demonstration units, farm technology incubators and processing facilities for value addition.

The study further recommended that women by participation, through their own indigenous knowledge, rural women can become entrepreneurs. Ezeh et al (2013) reports that Nigerian agriculture has been characterized by small scale production leading to low income hence, the farmers cannot afford yield increasing technologies and consequently experienced low output that formed a vicious cycle of poverty. In order to break this cycle and improve the performance of the agricultural sector, the Nigerian Governments embarked on a mission to develop the Agricultural sector of the economy designed to improve the traditional systems of production and raise productivity by transfer of relevant and proven production technologies to farmers, easing constraints on inputs supplies and provision of rural infrastructure.

The IFDC (2012) reports that Ghana the first African nation to have nearly halved the number of people living in extreme poverty, according to the United Nations Development Programme (UNDP, 2013). Ghana increased fertilizer imports as a key to intensifying Agricultural Production. The government increased fertilizer subsidy plans based on voucher system which contributed significantly to increased fertilizer use in Ghana.

In Zambia, the agricultural sector generates between 18-20 % of the Gross Domestic Product (GDP) and provides livelihood for more than that 50 % of the population (FAO, 2012). The sector absorbs about 67 % of the labour force and remains the main source of income and employment for rural women who constitute 65 % of the total rural population (CSO, 2014). Increase in rural incomes will therefore result in overall poverty reduction and increased food security. Agricultural growth has been below its potential due to a number of constraints such as; Low productivity - due to lack of access to resources and agricultural service support and loss of draught power; High dependence on rain fed agriculture and related risks, and limited utilization of irrigation; High post-harvest losses; Deficiencies in the early warning system and inadequate strategic food reserves; Limited diversification of agricultural production; High incidence of crop and livestock pests and diseases; Inadequate infrastructure and high energy and transport costs leading to poor market access by farmers resulting in loss of income and poor access to inputs; Limited access to affordable credits; Poor functioning agricultural grain markets, which limit small farmers to access markets; Restrictive trade policies which affects price volatility and regional specialization; Limited domestic market and Security of land tenure and land acquisition issues. The government plans to provide efficient and effective technology development and utilization and transfer services to assist farmers increase agricultural production and productivity and diversify crop production. There was therefore an urgent need to explore the role of technology in poverty reduction among rural women especially those engaged in agricultural activities, hence this study.

1.2 Statement of the Problem

The CSO (2014) records show that 69.7% of all Zambians are living below the poverty line with rural poverty being more prevalent, deeper and more severe than urban poverty. The incidence of poverty in 1996 for example was 82.8% for rural and 46.0% for urban areas. The highest incidence of rural poverty is found in Western Province (94%), followed by Northwestern and Luapula Provinces (92%). The Zambian government in collaboration with other stake holders is working hard to reduce poverty levels especially among rural women. The fertilizer support program is one such intervention government has embarked on to address high levels of poverty in rural areas. Although other countries like South Africa are miles ahead in using technology to address poverty through mechanized farming, Zambia has not done much in this area. It is clear that the role of technology in poverty reduction among rural women in selected rural areas of Kapiri-Mposhi and Kabwe districts has not been investigated hence this proposed study.

1.4 Research Objectives

The study was guided by the following objectives:

- To determine appropriate ICTs rural female peasant farmers use to reduce poverty
- To evaluate government policies that promote use of ICTs for poverty reduction among rural female peasant farmers

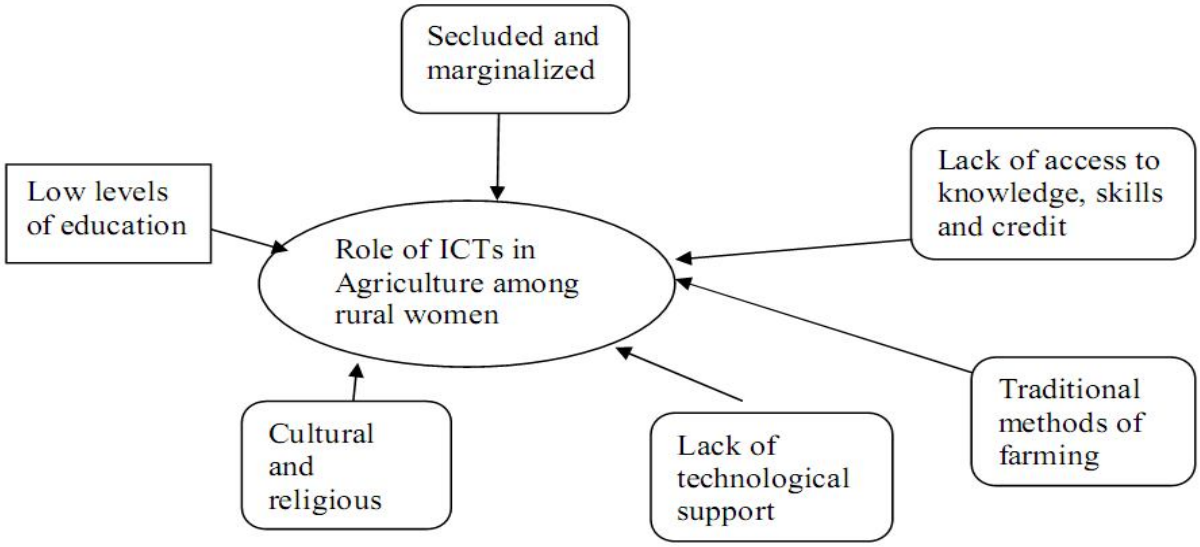
1.5 Research Questions

- What forms of ICTs are appropriate for use by rural female peasant farmers aimed to reducing poverty?
- What government policies are being promoted for poverty reduction among rural female peasant farmers?

1.6. Conceptual Framework

The conceptual framework above explains how different variables play a reciprocal effect on ICTs in agricultural with a focus on peasant farmers. Secluded and marginalized women: when women in rural areas fully participate in decision making they will gain and understand the benefits of application of new technologies. Low levels of education: women with adequate and appropriate education will be able to read and learn about the latest and most beneficial technologies in agriculture. Cultural and religious practices: when women are empowered with

knowledge and barriers removed then they will be able to make independent decisions and apply appropriate poverty reducing technologies. Traditional methods of farming: when women are empowered with new technologies they will be able to adopt new technologies and avoid perennial low input-low output relationships of farming. Lack of technological support: when women are supported especially by their governments with agricultural technology they will be able to achieve high yields and increase household income. Lack of access to knowledge, skills and credits: when women are trained and given access to agricultural credits facilities they will be able to have enough capital to adopt new technologies and help eradicate poverty.



II. LITERATURE REVIEW

2.1 Appropriate Technologies for Women in Rural Areas

Prato, B & Longo, R (2012) conducted a research on empowerment of rural people through initiatives in Agriculture and natural resource management. The research revealed that Agriculture and Natural resource management (NRM) are crucial for pro-poor growth. In turn, empowerment processes are key for the success and sustainability of development initiatives in both realms. It was recommended that supporting poor people's rights and access to natural resources, supporting participatory and accountable knowledge and advisory processes, enhancing the participation of poor rural producers in agricultural and related markets and supporting poor rural people's participation in policy and governance processes were key in ensuring poverty reduction among the rural women.

According to UNDP Human Development report (2006), 52% of Kenyans are poor the majority being women as reported by the Institute of Economic Affairs (IEA) survey in Kenya of July, 2008. The report further observes that 46% of the poor are women in rural areas. The report revealed that marginalization and exclusion of women was a major constraint in poverty reduction in Africa as a whole. While Agriculture remains the main stay of Kenya's economy, the sector has suffered prolonged droughts, increased poverty and to some extent, the 2007 post election violence. In addition, rural Kenyan women neither have full access to and control of land nor do they have access to capital or agricultural credit. The report recommended that there was great need for the government to look into legal structures and policy frameworks that discriminate against women in regard to land ownership and access to credit facilities as well as to provide information and integrate women into modern technology programmes of new crops/improved varieties, crop rotation, mixed farming, low cost soil fertility techniques, soil and water conservation and other modern farming techniques.

A research conducted by Ani, Ogunyika and Ifah (2004) in Nigeria compared the relationship between socio-economic characteristics of Rural women farmers and their Adoption of farm technologies concluded that when production technologies are made available to farmers there is improved production as long as the farmers adopt the technologies. Thomson (2004) carried out a study for DFID to ascertain the impact of rural agriculture on poverty reduction in Asia and sub-Sahara Africa.

The report concluded that poverty was deep rooted particularly where people depended on rain-fed agriculture, where the impact of new technologies was less apparent and agricultural productivity had generally stagnated and even fallen in some areas. Thomson further reported that poverty remained a predominantly rural problem with 75% of the world's poor living in rural areas and being more concentrated amongst women, children and the

elderly. Thomson cited Datt & Ravallion (1996) who stated that the pro-poor benefits of growth in agriculture were evident in rural India where poverty was reduced due to adoption of new technologies.

2.2 Policies on Technologies aimed at Reducing Poverty among Rural Women

IFAD (2012) report states that although Agriculture remains the key priority sector in the growth and poverty reduction agenda of Zambia where over 60 percent of the population derives its livelihood from agriculture, the agricultural sector has not received the attention it deserves.

The major contributors to poor performance of the sector are poor infrastructure and inadequate delivery of extension services and lack of information on appropriate technologies, Non-availability or poor access to inputs, weak market linkages to local and international markets, Inadequate agricultural finance and credit, and inadequate mechanization of the agricultural sector as well as dependence on imported agricultural inputs.

2.2.1 Agriculture Price Policies

All agricultural price policy instruments create transfers either to or from the producers or consumers of the affected commodity and the government budget. Some price policies affect only two of these three groups, whereas other instruments affect all three groups. In all instances, at least one group loses and at least one other group benefits.

2.2.2 Taxes and subsidies on agricultural commodities result in transfers between the public budget, producers and consumers. Taxes transfer resources to the government, whereas subsidies transfer resources away from the government. For example, a direct production subsidy transfers resources from the government budget to agricultural producers.

2.2.3 International trade restrictions are taxes or quotas that limit either imports or exports. By restricting trade, these price policy instruments change domestic price levels. Import restrictions raise domestic prices above comparable world prices, whereas export restrictions lower domestic prices beneath comparable world prices.

2.2.4 Direct controls are government regulations of prices, marketing margins, or cropping choices. Typically, direct controls must be accompanied by trade restrictions or taxes/subsidies to be effective; otherwise, “black markets” of illegal trade render the direct controls ineffective. Occasionally, some governments have sufficient policy power to enforce direct controls in the absence of accompanying trade regulations. Direct controls of cropping choices can be enforced, for example, if the government allocates irrigation water or purchased inputs.

2.3 Measures to promote use of Technologies among Rural Women in Poverty Reduction

The Africare magazine for 2015, reports that in Mozambique, Africare’s SANA Project, funded by United States Agency for International Development Food for Peace Program supported interventions in agriculture, nutrition and risk management in an area plagued by food insecurity attributed to low crop yields, pest and disease infestation, and poor farming practices. In this region, an increase in sustainable agricultural practices led to an increase in income for 88% of the farmers once seed production was facilitated with private sector assistance and most these were mothers.

2.4 Previous Studies

In the Zambia Journal of education, the encouragement of the implementation of IT programs in institutions has been posited. According to Kasonde-Ngandu and Mandyata (2007), getting acquainted with IT knowledge makes a person fit in well in society as the development is advancing. This is especially helpful for women who society has treated as less superior to men for a long time. Various articles written in the Zambia Journal of education in line with IT studies have also highlighted the importance of offering IT training to women. It has been noticed that the inculcation of IT knowledge and training can help in eliminating computer illiteracy in society. When people, especially women, become computer literate they would make life easier in the sense that much of machines that need to be operated require computer literacy to some extent.

2.5 Comparative Studies

Information Communication Technology (ICT) has the potential to contribute to development, especially in rural areas of developing countries. However, the mechanism through which ICT can be combined with development agendas and an understanding of the actual development process and impacts of ICT are less well understood or properly defined in the academic literature. ICT has the potential to improve the lives of rural women.

Noting that there had been insufficient attention to understanding the impact of ICT on women and that few projects initiated by the International Telecommunication Union (ITU) had taken into account the needs and perspectives of women the 1998 World Telecommunication Development Conference (WTDC) resolved to establish a task force on gender issues (ITU, 1998). To emphasize the importance of gender issues, this task force was converted into a standing Working Group on Gender issues at the WTDC in 2002 (ITU, 2002). This brought renewed emphasis on training and education for women in ICT, a theme that recurred at the World Summit on the Information Society (WSIS), which

emphasized the importance of training and education of women to motivate and promote "participation and active involvement of girls and women in decision-making process of building the information society" (WSIS, 2005).

Sometimes ICT is an integral part of an organization's activities, as was the case with the Self-Employed Women's Association (SEWA), India, which has used many facets of ICT, including training poor women in the use of video cameras and other audiovisual equipment, and educating them via satellite communication about the importance of insurance (Roger Chapman R et.al, 2002).

In an endeavor to attract women to participate in its Village Knowledge Centre (VKC) an activity, the M.S Swaminathan Research Foundation (MSSRF) requires that at least one woman is engaged in the management of each VKCs being women. This involvement has contributed to increasing women's influence and status, not only from working with centres, but also from small enterprise activities associated with this activity, such as production of paper and bio-pesticides (Ashley C et.al, 2001). Another example from India is the "Putting of ICTs in the Hands of Women of Kanpur.

It is agreed that the role of technology in the field of IT as being important in the development of rural women's life and supports the idea of implementing programs to help people in society. These programs would advance the knowledge of IT in people especially in the rural area set up. IT has been regarded as a field that is helpful in this era. Much of what a person would do using a machine or gadget. Apart from IT being offered on tertiary level it is also good for computer lessons to be taught in primary and secondary levels. When a pupil has been exposed to computer lessons at a tender age would give that individual that advantage of fitting well in society. In this "Digital age" (as some people have termed it), having some knowledge in IT makes a person operate various devices intelligibly. For example, having some basics in computer can make a person operate a phone, an ATM machine, and so on. In addition, the researcher would support the existence IT institutions in rural areas to help especially women to acquire knowledge some authors have supported it in the Zambia Journal of Education.

Historically, Zambian rural women have been identified to be confined to domestic house work and be a responsible wife pleasing the husband. Furthermore, privileges of being formally educated would be given to a boy rather than a girl because a girl's destiny is to get married and bear children. Traces of such kind of a trend is still present in some parts of Zambia today which in one way or the other has contributed to women in rural areas lag behind in terms of development. Not only that, the use of technology has become a cornerstone of every form of development yet rural women remain disadvantaged in accessing technology to better their lives more especially those engaged in Agricultural. Therefore, this study was carried out to establish the role technology play in poverty reduction among rural women in selected rural areas of Kabwe and Kapiri-Mposhi districts.

III. RESEARCH METHODOLOGY

The study employed survey research design to establish the role of technology in poverty reduction among women in rural areas especially those engaged in agriculture. The target group comprised of both the single and married women engaged in agriculture and use technology for poverty reduction. The total sample size was 50 women from rural Kapiri-Mposhi and Kabwe districts. The sample consists of 25 women from rural areas of Kapiri-Mposhi district (Mondake and Mukochi farming blocks) and 25 women from rural areas of Kabwe district (Mpima farming block). In this study a stratified random sampling technique was employed in order to have each element of the population be represented so as to allow diversity of views from the population. Questionnaire and interview schedules were used to collect data in this study. The interviews were used because they are flexible and allowed the researcher to ask follow up question were needed. The questionnaire was used because data were collected from a relatively large sample ($n \geq 50$). Questionnaires were also used in order to attain high levels of reliability and validity of the research outcome thereby reducing on the interviewer's biasness. Data was analyzed both qualitatively and quantitatively. In the study thematic analysis was used to analyze qualitative data while quantitative data was analyzed using Statistical Package for Social Sciences in order to generate frequencies, tables, percentages and graphs.

4.0 Presentation of Research Findings

4.1 Women's' Access to ICTs

The respondents were asked to indicate their accessibility to ICTs and technology. The responses are tabulated below:

Table A: Distribution of women respondents who have had access to ICTs

Question	Responses		
		Frequency	Percentage
Do you have access to technology or ICTs?	Yes	0	0%
	Sometimes	15	30%
	Never	35	70%
	Total	50	100%

Source: Field Data (2016)

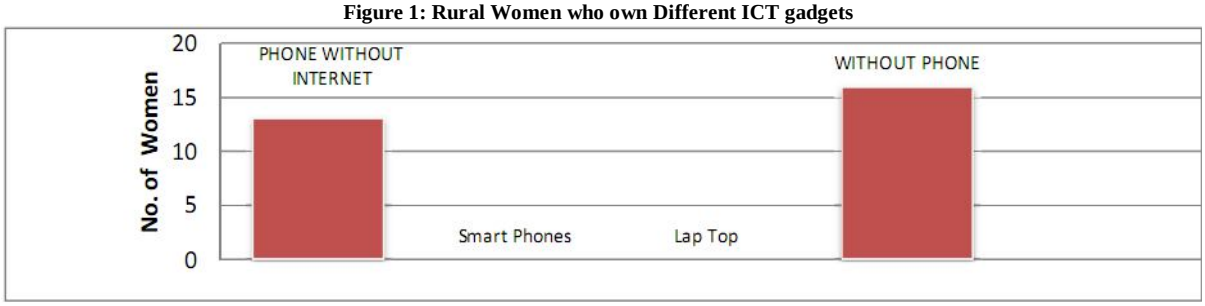
The findings revealed that 35 (70%) of the women had no constant access to technology whereas 15 (30%) indicated that only sometimes do they have access to technology while no one categorically affirmed that they had access to ICTs.

Table B: Rural women who own smart phones

	Frequency	Percentage
Phones without internet	16	32%
Respondents without phones	34	68%
Smart phones	00	0%
Lap Tops	00	0%
Total	50	100%

Source: Field Data (2016)

Figure 1: Rural Women who own Different ICT gadgets



Source: Field Data (2016)

It is clear that very few women who are engaged in agricultural activities in rural areas have ICT gadgets like smart phones which would enable them access agricultural information online. Even those who had phones, the number are not only small 16 (32%) but the phones they had did not have internet facilities.

4.4 Women's Ability to Apply Different Technologies in their Agricultural Activities

The table below shows the categories and parameters collected. The results were measured in levels of intensity. Therefore the data collected per entry was regarded as either contributing to high intensity of the use of the technology for example or to the low intensity of the use of the same technology.

Table C: Women's Intensity of Using Technologies in Agricultural Activities

Intensity		High	Low	Sample
Mechanical Technologies	Involvement	44	6	50
	Tools	35	15	50
	Irrigation Methods	6	44	50
	Processing Methods	37	13	50
	Transportation	11	39	50
Biochemical Technologies	Fertilizer Intensity	27	23	50
	Crop Protection Intensity	7	43	50
Government Policies	Government Infrastructure	43	7	50
	Government Organised Training	33	17	50

Source: Field Data (2016)

4.4.3 Government Policies on Agriculture Targeting Rural Women

Table D: Respondent's Views on Government Policies Targeting Rural Women

Variable	Parameter	High	Low	Sample
Government Policies	Government Infrastructure	43	7	50
	Government Organised Training	33	17	50

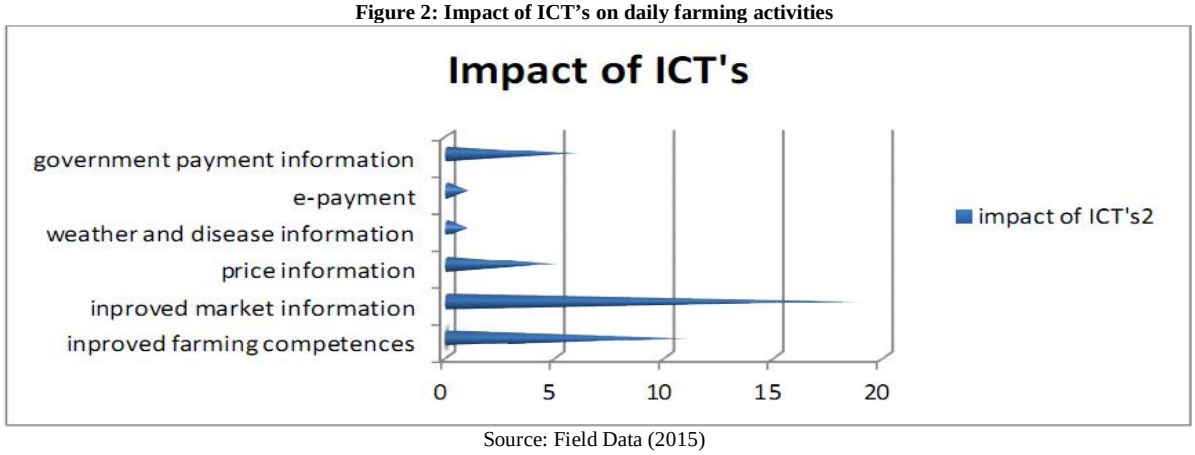
Source: Field Data (2016)

Respondents totaling 43 out of 50 (86%) confirmed that they have been availed with public investments in infrastructure by government constructions to promote agriculture in their areas by way of providing Roads, Schools and Cooperative homes where women share ideas about agriculture. By and large, the table also shows that 66% of the women farmers have experienced training organised by the authorities in their areas sent by government on agriculture and the use of tools.

4.5 Impact of ICT's on daily farming activities

It was discovered that evolution of ICT's has had an impact on farmers' daily farming activities.

Figure 2: Impact of ICT's on daily farming activities

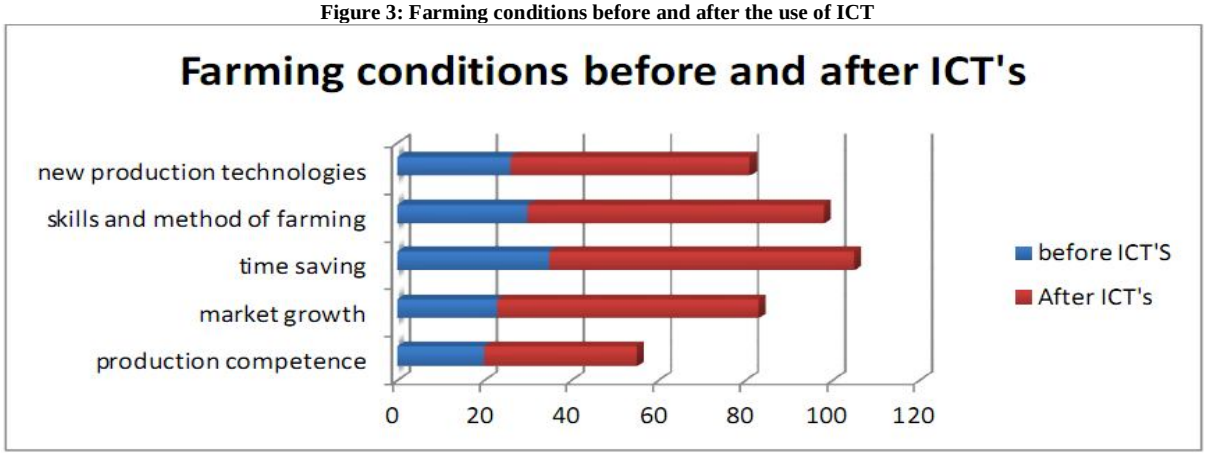


Source: Field Data (2015)

4.5.1: Farming conditions before and after the use of ICT

There have been so many improvements in the farming methods with the implementation of ICT technology. Access to information on these new methods such as conservation farming has been enhanced. Access to vital information is able to reach farmers in the most remote areas quickly and more efficient.

Figure 3: Farming conditions before and after the use of ICT



Source: Field Data (2015)

4.5.2 Challenges of the use of ICT's

Despite ICT's having all these benefits, they also have a number of challenges. These are some of the challenges that rural women are facing in trying to implement ICT's in their daily farming activities.

- Unaffordable prices of ICT material
- Constant electricity shortage due to load shedding
- Airtime not affordable
- Highly costing telecommunication services
- Foreign language problem
- Telecommunication network shortage

5.0 Discussion of Research Findings

5.1 Appropriate Technologies rural female farmers can use in order to Reduce Poverty

The contribution of new technology to economic growth and basically poverty reduction can only be realized when and if the new technology is widely diffused and used observes Hall and Khan (2002). This diffusion is gradual and cannot jump from nothing to complex technologies. In response to the first objective therefore, this paper identifies that the appropriate technologies that rural women especially those engaged in agriculture are those that lessen the work of cultivating the land, those that give options to natural disasters like drought and those that lessen the work of processing and transporting farm produce. These simple and appropriate technologies once implemented can lead to high yield in agriculture productivity which in turn can lead to high income

for women in rural area which inevitably result in poverty reduction. ‘

In response to the second objective of this paper, it could clearly be seen from the results of the respondents that 86% of the women farmers appreciate the government policies on public investment in infrastructure from the existence of Schools and Roads in rural areas that help or contribute to the promotion of technologies in rural areas. As an entrepreneur interested in establishing a company in these areas, such policies attract the businesses and make it easier for operation. The government policy evaluation performed in this paper through stakeholder engagement who in this case happens to be women farmers confirmed that Schools and Roads which are part of Public investment Policies contribute to poverty reduction in promoting technologies as can be seen from the credible evidence gathered.

This paper also managed to reach the third objective in that 66% of the women talked too attested to the first hand training that the government through the local authorities has put measures to ensure that rural women are reached to and educated on the use of some technologies in farming in order to reduce poverty. These measures, often conducted by “men on motorbikes” as they are locally called, provide a competitive advantage especially on the entrepreneurs who intend to establish the businesses on agricultural Technologies in these areas.

The agricultural technology adaptation and development is not doing very well in most rural set ups in Zambia because there are not many young people that are involved in agricultural activities. Hence the flow of agricultural information is very low. It is believed that, young people tend to adapt to change quickly than elderly people. Countries having a lot of small (probably poor as well) farmers are facing severe problems in the capabilities of investing in ICT’s. Kabwe and Kapiri Mposhi rural areas are having similar problems. Despite them having fertile land, they still practice substance farming on a very small scale.

Availability of broadband Internet in rural areas is very often mentioned as a big issue that hinders ICT adaptation in agriculture. Women tend to lack the financial resources to use, rent, or purchase established and new technologies. For example, Internet or computer access is not readily available in rural areas and if at all available a fee is charged that few lower income women can afford. One of the main reasons women lack access to capital is that laws, policies, and social customs often favour men’s ownership of assets. Inheritance laws and social customs in many developing countries prohibit women from owning property, limiting their ability to take out loans that require collateral for large technology purchases. Nor can they buy computers or mechanical equipment that would aid in their work or allow them to train others. This inability to borrow leads to a vicious circle: women cannot develop their skills, which prevents them from earning higher incomes, so they cannot afford the technologies that might boost them to the next rung on the economic ladder.

On the one hand, the lack of ICT equipment itself presents another quantitative criterion for measuring poverty (e.g. number of mobile phones or telephone lines), even though such indicators do not say how the existing infrastructure is used. The consequences of this lack of physical assets (which in practice means being isolated both from receiving and giving information in a modernizing society) illustrate the qualitative sides of poverty. The lack of information is very prominent, due to its far-reaching implications: as (Mehra and Rojas, 2008:186) put it, “poor people need among other things affordable access to information that is vital to their livelihoods”.

The agricultural information needs of respondents ranged from animal husbandry (35%), to farm inputs/new technology (47%), soil type (5.5%), crop type/diseases (4.5%, 1.5%) and gardening/crop management (6.5%). Reasons for this information ranged from, good harvests, ICT use and access amongst rural women in Kabwe and Kapiri Mposhi rural farming area, enhancing herd fertility, prevention of diseases, and health. The majority of those interviewed (23; 46%) use the radio for their information needs, while (9:18%) use the TV. There are more respondents who use the cell-phone (34; 67%).The other (0:%, and 0:0%) respondents do not use any ipad or computers respectively for agricultural information needs. Notably, there are no respondents who use the computer/Internet.

5.2 Affordable and user-friendly ICTs and Measures aimed at Promoting the use of Technology

Government has instituted and promoted several affordable and user-friendly ICT facilities aimed at helping rural women have access to agricultural information. Suffice to note that government works in partnership with the help of private sector. Some of such ICT facilities are discussed hereunder:

5.2.1 Mobile Phones

The residents of these areas in particular women use the mobile very much. It is a tool for regular communication. The residents of Kabwe and kapiri rural are engaged in farming. However most women do not have adequate land to farm but that is their major source of livelihood. The women in these areas are very actively involved in farming and have taken up major responsibilities in their households because

the men folk prefer to engage in work as house servants in nearby townships.

The women have joined the cooperatives so that agricultural incentives are passed on in groups. In Kabwe and kapiri rural, the coordinators for agriculture inputs and chairpersons for the cooperatives are sometimes teachers whom illiterate women depend on to access and market their farming equipment and produce. This entails that, the affected women have to rely on the teachers' mobile phone to communicate information from the ministry of Agriculture regarding farming inputs. Short messaging system (SMS) is used to send messages to all members of the cooperative when a meeting is called or when the seed and fertilizer are received.

5.2.2 Challenges using mobile phones

The major hindrance is that ultimately the many women members do not know how to read messages. Thus they will rely on messages passed on by word of mouth. The person with the information finds it cheaper and quicker to communicate using SMS but the receiver does not know how to retrieve phone messages. Major challenges that the rural communities have faced is impeded mobile application due to language barrier and illiteracy. It was reported in Ghana (Frempong et al., 2007) and in Kenya (Ashraf et al., 2005) that lesser extent of SMS usage by farmers was due to higher rate of illiteracy. It was stated during the study that those who have resources to buy better and advanced mobile phones indicated the need to teach them the functions of the phones.

5.2.3 Phone as tool for sending and receiving money

The phone is a good tool for sending money, i.e. MTN money, Airtel money, all that is required is a phone and registration for the same mobile package. The package can be used by the farmer support program to credit farmers and avoid walking to town to the District Offices to access the funds. Farmers who sold maize to the government through Food Reserve Agency had to go to distant places to access their funds. This could make the farmer reduce on transport costs.

5.2.4 Internet

Of the 50 residents interviewed, less than half have ever connected to the internet or have used their mobile phone for other uses other than phone calls. The Internet is still an elitist communication media for most people, but because of its unique capabilities, and some positive impacts of it, there are great expectations of its value to the rural communities if it was made affordable for all. The men at least have interest in communicating using what's app platform not the women. The women find such things as extravagant and unnecessary. They would rather use the money for food and farming inputs. The internet will be very useful to the farming community if the importance is well communicated. The residents of Kabwe and kapiri rural would work well and be more knowledgeable farmers if they received the information in good time. For example, very few residents were aware of the caked fertifilizer distributed by Nyiombo investments on the Copperbelt and that the Government had since directed them to withdraw it immediately. There is need to create a platform for farmers in this area on the internet where information could be accessed.

5.2.5 Need for telecentres or internet cafes

A telecentre is a place that offers ICT facilities. Generally Telecentres are seen as physical centers providing access for the public to communications and information services using a variety of technologies including library services, phone, faxes and computers as well as Internet and e-mail. Looking at the Zambian government's ability the telecentre may not be feasible but the internet cafe can be a business that can be given a boost to get to rural parts of the country. Establishing such facilities will give the residents a chance to learn and embrace ICT in their homes.

5.2.6 Power/electricity

Most residents do not have reliable power in their households. Many of these women own a solar charger and lamp which can only charge a small phone and a phone like I phone 5 and Samsung 6 Edge cannot be charged with such small gadgets. These require more power and have to be taken to the market for power charging at a fee.

5.2.7 Infrastructure

Information technology requires infrastructure. Therefore, for people to be able to use it, the equipment has to be bought. Among the farmers and residents of these areas very few have or know about the modem and none of them has a radio for internet. The most common is the MTN or Airtel dongle. Most of the respondents who have dongles bought them for a specific reason that is when the child needed information to apply for admission to a college or university. Such equipment is not regarded as valuable tools for farmers. This exhibits the need to educate the residents on the importance of the internet. In spite of good network coverage in the areas, the residents do not put it to good use.

5.2.8 Radio and Television

Almost all the respondents have access to information received through radio. The most popular radio station in the area is radio Maranatha a community radio station. Most residents tune in to this radio station when they are at the markets, in the buses and taxis. Many of the respondents indicated that the Nokia phone was preferred because of its long life battery which allows for the use of the radio facility of the phone. However, just like the internet suggestion of a platform for farmer information, there is great need to increase programmes that communicate to farmers on different subjects.

The television is a facility that is desired by many residents, but due to access to power supply the television is not owned by many households in the farming community. The residents of Kabwe and kapiri rural mostly use the used motor vehicle batteries for the television set to work.

5.3. Government Policies aimed at Promoting use of ICTs and Technology

5.3.1 Policy

This typically includes spending priorities like expanding telecommunications infrastructure and providing public access centers, integrating ICT in the school curriculum, digitizing health systems and introducing databases in hospitals, training entrepreneurs, supporting new legislation or property rights options for software choices, supporting tele-working modalities or digital tools for cultural heritage, and managing disasters and assuring national security, among many others. The ICT policy in Zambia "is designed to guide and mainstream the use of ICTs in all sectors of the economy; hence the policy is an ICT for Development policy designed to fit within the socio-economic development agenda of the country rather than a stand-alone technology framework" National ICT Policy, Zambia (2006)

Therefore, if a policy is well developed and implemented, communities will be computer literate and all communities will appreciate modern technologies. People will be connected to the global village and be able to compete and learn on a global perspective. The internet can be a global market for the farmers. It would even be cheaper for farmers to buy farming equipment online other than through middle men who charge exorbitant prices. Policy would enable the residents to be more computer literate due to regular use of ICTs. There has to be a deliberate policy to include ICT in most study programmes even for adult learners. Poverty is seen as the opposite of well-being. Beyond a lack of income, the multidimensional concept of poverty also refers to disadvantages in access to land, credit and services (such as health and education), vulnerability (towards violence, external economic shocks, and natural disasters), powerlessness and social exclusion.

5.3.2 Appropriate ICTs for rural community

As earlier alluded to in the paper, the ideal technology for rural setting, i.e. Kabwe and kapiri rural community should be according to the needs of the residents. People need to be educated on the use and benefits of the internet. The other benefits of the mobile phone need to be known by the users. The mobile phone and other equipment connected to the internet are the best equipment for the women in Kabwe and kapiri rural.

5.3.3. How ICTs have enhanced the women's quality of life

A number of arguments have been raised as to whether or not ICTs contribute toward improving a society's quality of life. Evidently, ICTs enable most women to stay in touch with current affairs. Many rural women underscored the role that ICTs play in daily news broadcasts. A large majority of the respondents felt that ICTs, particularly the radio and TV, socially enriched their lives. This was followed closely by communicating with family members and friends. To most respondents, the mobile phone was particularly useful in this regard. Under entertainment, the respondents listed the ability to listen to music and other entertaining programs as important.

Mostly rural women and their families have felt the impact of rising food prices across all regions. In Africa, countries that were self-sufficient food producers as recently as fifty years ago have become major food importers over the last few decades, making them more vulnerable to erratic and rising food prices. Women, poor rural women in particular, bear the brunt of rising prices; for example, in many countries, when men migrate for employment, women have greater responsibilities and chores to maintain farming activities and care for dependents. Furthermore, escalating prices mean women; particularly those already struggling to feed themselves and their families, have less money to put towards education and healthcare (Fook, 2011). Hence it is important for governments to put in place policies that will foster poverty alleviation among rural women.

Put simply, two symbiotic processes define the link between technology and women's economic advancement. First, incorporating women into the technology development lifecycle ensures that they get access to the technology. Second, women advance economically when they use the technology and leverage its advantages in their everyday lives.

Indeed, it is often in rural areas that socioeconomic disparities between men and women are the most acute. According to the United Nations, women are generally three times less likely to find employment than men and, despite representing 70 per cent of the rural labour force; three out of four are unpaid. They thus often exist in the shadow of their male counterparts. Securing rural women's access to, and control over resources (e.g., land, livestock, water, salary coming from their activities) can contribute to poverty reduction and the economic growth of an entire country.

Through this research and encounters with the rural women respondents, it became clear that the level of diffusion of ICTs in rural areas is almost zero. The only ICTs they know of, speak of and enjoy are the mobile phones. This research set out to look into other ICTs like the computer and the Internet. It was clear that the respondents had no access to these two new media forms.

The difference between access to and use of ICTs in urban and rural areas, and between prosperous and poor members of society often called the 'digital divide' has been of particular concern. The characteristics of the rural population themselves are not conducive to ICT absorption. Barriers include: low population density and remoteness, low levels of functional literacy, little or no basic or computer literacy, low awareness, low disposable income, poor health and living conditions, and constant struggle for survival. Individuals also benefit from the availability and use of ICTs in a number of ways for example, by substituting phone calls for travel, which saves time and money, and by using ICTs to obtain information on prices, for their own produce and for purchases. There are, however, also constraints on the potential impact of ICTs in many developing countries. These constraints include inadequate technical infrastructure, limited human skills to use available networks and services, the relatively high cost of communications equipment, as well as education on ICT.

Finally, ICT is not an area that has been well integrated in rural poverty reduction strategies: often narrowly defined as modern technologies (e.g., computers & the internet) and the more traditional technologies (e.g., fixed line telephone, radio & television) have not yet themselves been fully exploited

6.0 Conclusion and Recommendations

This paper has revealed feasible poverty reduction will require identification and inclusion of women who are the majority poor and also the use of ICTs. ICTs undoubtedly offer opportunities for dissemination of information access. Involvement of women in the formulation of poverty reduction programs will go a long way in attaining the set goals since women have the ability to spend all their resources for the survival of members of their family. Women also make good resource managers. Note also that in attaining all this, it is ICTs that can help in stretching implementation energies to the maximum. Vast information to rural areas will be disseminated in a more cost-effective and timely manner. Appropriate Technologies when implemented, promoted by specific government policies with proper measures attached are essential for poverty reduction among rural women engaged in Agriculture in rural parts of Zambia. Based on the findings of this study, the following recommendations emerged: 1. Government should strengthen ICTs in local primary and secondary schools in order to eradicate the problem of technical support as it can be seen in the local community that most women are illiterate in the area of information technology. 2.Government in collaboration with key stake holders such FAO, UNICEF, UNESCO and the Ministry of Agriculture should provide telecenters that are tailored to support community development in rural areas so that even women without computer devises can access technical support whenever they need. 3. Government through the Ministry of Agriculture should continue reviewing poverty eradication policies in order to make them relevant to the contemporary realities through the use of ICTS.

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