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An Assessment of the Zambian Agricultural Policy on Empowerment of Small-Scale Women Farmers: Case Study of Musakwiye Farming Cooperative in Chipata District

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Abstract

Women play a significant and crucial role in agricultural development and allied fields and of the first time, the Zambian Government outlined specific objectives in its National Agriculture Policy, targeting empowerment of women small scale farmers. Therefore, efforts were made to assess how these policies are playing out and the impact they are bearing on the empowerment of the women small scale farmers. The study was undertaken in Chipata District through a case study approach. The General objective was to assess National Agricultural Policy on empowerment of small scale women farmers. Research questions included; Has policy enhanced access to appropriate agricultural technologies for women small scale farmers; Has policy

improved access to markets for women small scale farmers? And how policy is promoting access to Agro – related information for women small scale farmers?

The investigation was accomplished through qualitative research methods and 50 questionnaires were distributed to women small scale farmers from Chipata District. The results from the findings showed that whilst the women small scale farmers are very much dependent on government and its policies for their farming engagements, the help that they are getting on the other hand, is somewhat limited. These limitations have necessitated for them to come up with alternative means to self-empowerment in order to enhance their farming activities.

Keywords: Empowerment Small Scale Women Farmers, Technology Adaptation, Agro - Related Information, Credit, Markets

Background Statement

Women in the world over have always played a significant and crucial role in agricultural development. However, due to the patriarchal system that is predominant in most societies, their hard work and their contribution to household expenditure have been undervalued, and this has subsequently resulted in them not receiving proper respect for their work. By and large they have remained invisible workers.

Out of nineteen studies reporting on the effects of empowering women by increasing their control over productive resources, as well as provision of inputs to women 12 of these established that women's empowerment is associated with higher female use of inputs and technology. Abdourahman (2010) [1].

Higher female agricultural productivity is contingent on a variety of factors such as technical training and support, credit availability, and commercial crop choice and provision of inputs. Ikemoto and Yasmin (2015) [2].

A study conducted in India whose findings demonstrated an upscale of livelihoods after women small scale farmers were empowered with farming inputs. FAO (2011) [3].

Before starting dairy farming, they were housewives but after engaging into small-scale dairy farming it created income-earning potential for rural women and this contributed to the family income, which led to savings, ultimately improving their lives, not only at community level, but household level.

Studies show that if women in Sub Sahara simply had access to the same fertilizers and seeds as men, then their yields would increase 20-30% and the total number of hungry people around the world reduced by 12–17%, *ibid*.

Chomba *et al.* (2022) [4] postulates that, Zambia's 1.5 million smallholder farmers producing most of the domestic food

supplies are extremely vulnerable to climate shocks, as they predominately depend on rain-fed agriculture. Furthermore, they face limited access to high quality inputs, climate and post-harvest management information, sustainable markets and financial services.

The Zambian government through its ministry of agriculture has formulated a policy that allows for empowerment of small-scale women farmers. Imbedded in this National Agriculture Policy is the Farmer Input Support Program, F.I.S.P. The majority of farmers under this program have stagnated at less than two hectares of cropped land, and obtain limited value from their production associated with low seasonal annual incomes, NAP 2016.

Amongst most predominant issues faced by small scale women farmers include low grain productivity and low income due to limited access to high quality inputs, financial services, post-harvest storage, markets and information, *ibid*. It is in this regard that the study investigates the outcomes of women empowerment for small scale farmers and seek to validate the extent of policy implementation.

Objectives

The General Objective of this study will be to assess the Zambian Agricultural Policy on Empowering of Small-Scale Women Farmers.

Specific Objectives

1. To examine how policy is enhancing access to appropriate agricultural technologies for women.
2. To investigate how policy is improving access to markets for women small scale farmers.
3. To analyze how policy is promoting access to Agro – related information for women small scale farmers.

Literature Review

Years of literature reinforce the premise that the adoption by farmers of improved agricultural technologies is a key means for alleviating poverty. Thirtle and Piersse (2008) [5]. Increasing agricultural productivity empowers the poor by increasing per unit production, lowering food costs, and boosting employment. Bonabana-Wabbi (2012) [7], defines adoption as a mental process an individual passes from first hearing about an innovation to final utilization of it. The need for adaptation in their definition by explaining that adoption is the integration of a new technology into existing practice and is usually proceeded by a period of 'trying' and some degree of adaptation Loevinsohn, Sumberg and Whitfield (2013) [8]. Thus, the use of new technology requires a process of try and error or trial and perfection to be undertaken, before the users can gain mastery over it. Technology, however, should result in increased efficiency and effectiveness whenever applied. It is no wonder that future growth in the agricultural sector must come from yield increases, achieved through the use of improved seeds and other planting materials and better agronomic practices and harvesting and processing techniques. The use of agricultural technologies affects the rate of increase in agricultural output. It also determines how the increase in agricultural output impacts on poverty levels and environmental degradation. Meinzen-Dick *et al.* (2014). Therefore the focus of recent research has been to find better agricultural practices. New strains of crops have been discovered. The focus of research has also been on improvements of land, soil and water management practices

ibid. However, the only way for smallholder farmers to benefit from these research station technologies is if they perceive them to be appropriate and proceed to implement them on their farms.

Gender issues in agricultural technology adoption have been investigated for a long time and most studies have reported mixed evidence regarding the different roles men and women play in technology adoption. In analyzing the impact of gender on technology adoption, no significant association between gender and probability to adopt improved maize. Technology adoption decisions depend primarily on access to resources, rather than on gender and if adoption of improved maize depends on access to land, labor, or other resources, and if in a particular context men tend to have better access to these resources than women, then in that context the technologies will not benefit men and women equally. On the other hand gender may have a significant influence on some technologies. Gender affects technology adoption since the head of the household is the primary decision maker and men have more access to and control over vital production resources than women due to socio-cultural values and norms. Tesfay *et al.* (2008) [10]. Rural and agricultural transformation is occurring in many Asian countries. Economic growth and the commercialization of agricultural systems is leading to increased mechanization of farming systems. Examples of technologies for which adoption is growing include modern stress-tolerant crop varieties, improved crop and natural resource management, direct-seeding, integrated pest management, site-specific nutrient management, conservation agriculture, sustainable intensification, chemical technologies, and agricultural machinery (e.g. row seeder, trans planter, combine harvester) Zheng *et al.* (2014) [12].

A study on China, showed that cooperative membership has a positive and significant impact on the likelihood of adopting organic soil amendments including organic fertilizer and farmyard manure Ma, Abdulai and Goetz (2018) [13]. Similarly, another study on China) revealed that compared with non-members, cooperative members are more likely to adopt integrated pest management technology. Ma and Abdulai (2019) [14]. This is despite these production technologies being easily accessed by farmers from input markets or government extension services at a low price or even for free in some cases *ibid*.

In developing countries, most rural farmers are illiterate and poor and do not adopt new technologies because they lack knowledge and cash. Despite the technological advances in irrigation, crop varieties, agro forestry, and fertilizers, most technologies do not reach female farmers, as they receive no information about them. Women's lack of involvement into technology design and implementation results in the appropriateness of new technologies and has created a new problem.

Limitations to increased agricultural productivity in smallholder agriculture in sub-Saharan Africa include unreliable and or poorly distributed rainfall; low and unattractive prices; lack of small scale irrigation facilities; insufficient selection of suitable crop varieties, especially for the marginal areas; pest and disease problems; large post-harvest losses; poor research-extension linkages; poor supply of inputs, especially seed and fertilizers; infertile soils; and failure of the smallholder farmer to adapt to changing environments and adopt new technologies. It is precisely for these reasons that Development Experts have

been advocating for vast adoption of technological advancements as a means of counteracting against the common challenges of the African Farmer.

These agricultural technologies include all kinds of improved techniques and practices which affect the growth of agricultural output. Jayne *et al.* (2003) [15]. The most common areas of technology development and promotion for crops in Africa include new varieties and management regimes; soil as well as soil fertility management; weed and pest management; irrigation and water management. Loevinsohn, Sumberg and Diagne (2012) [16].

Studies in sub-Saharan Africa have also shown that male headed households have more access to land, education, and information on new technologies. Bisanda and Mwangi (1996) [17].

There is a strong association between the gender of the household head and adoption of technological recommendations *ibid.* As earlier established, in some countries, female-headed households are discriminated against by credit institutions, and as such, they are unable to finance yield-raising technologies, leading to low adoption rates Mkandawire (1993) [18]. Access to credit has been reported to stimulate technology adoption, Mohamed and Temu (2008) [19]. It is believed that access to credit promotes the adoption of risky technologies through relaxation of the liquidity constraint as well as through the boosting of household's-risk bearing ability. Simtowe and Zeller (2006) [20]. This is because with an option of borrowing, a household can do away with risk reducing but inefficient income diversification strategies and concentrate on more risky but efficient investments.

However, as stated, access to credit has been found to be gender biased in some countries where female-headed households are discriminated against by credit institutions, and as such they are unable to finance yield-raising technologies, leading to low adoption rates. Muzari, Gatsi and Muvhunzi (2012) [21]. There is therefore need for policy makers to improve current smallholder credit systems to ensure that a wider spectrum of smallholders are able to have access to credit, more especially female-headed households.

Similarly with access to agricultural markets, women small scale farmers are seen to be lagging behind. Agricultural marketing is a process which starts with a decision to produce a saleable farm commodity, involves all the aspects of market structure or system, both financial and institutional, based on technical and economic considerations, and includes pre- and post-harvest operations, assembling, grading, storage, transportation and distribution National Commission on Agriculture, (1976).

Markets allow farmers to benefit from increased production by selling the surplus, allowing them to get extra income, which can be used to purchase other food and non-food items, including inputs such as improved seed, fertilizer, chemicals and machinery for increased productivity. Some literature. Heltberg and Tarp (2002) [22], contends that such benefits at a household level have a positive impact on economic growth. However smallholder farmers are not homogenous, and therefore, some may face barriers to participation in these markets.

The situation is even more dire for women small scale farmers in reality, as many women face socioeconomic and cultural constraints that impede them from taking advantage of the marketing aspect of farming. For instance, previous

agricultural extension studies provided consistent evidence of gender-specific constraints in access to extension services. Quisumbing (1996). Women have higher opportunity costs of time due to their various livelihood activities and responsibilities in the household that would reduce their incentives for effective marketing strategies *ibid.*

In Bangladesh for example, many women experience restrictions on physical mobility beyond their communities, described as main barriers that limit women's access to markets, as many women in Bangladesh have structural and cultural constraints. Bhattacharyya, Burnlee and McNamara (2022) [25]. They add that specifically, cultural norms do not favor women's marketing activities, citing an example where some regions open a local market from 4 to 8 pm, but it is a woman's busy time of the day for cooking, childcare, and house chores. Furthermore, markets lack women-only sanitation facilities. Information from key informant interviews showed that the majority of women respondents preferred buying/selling products from/to local traders rather than going to local markets to avoid market fees (market taxes, stall rentals, etc.) and cultural conflicts within the household and community, Catholic Relief Services – CRS (2015) [26].

However, when women sell agricultural products to a local trader, they will face the 'unjust price' issue, receiving a lower price than what it could be sold for at the local market, Still reflecting on Bangladesh, Bhattacharyya, Burnlee and McNamara (2022) [25], explains that vitalizing marketing in the community could provide small-scale farmers a secured marketing outlet for food production, and it could generate extra money, although it tended to be small by selling homestead food products, which appeared to be correlated with changes in expenditure patterns. However, if farmers do not spend this extra income on food purchases, it is hard to anticipate improved food security.

In Africa, the Agricultural production and preservation of land resources is primarily the responsibility of women and children, yet gender discrimination in access to land resources is a serious problem, particularly, in rural Africa. Land is an important resource for the survival of rural women and to give women land is to empower them to fight food insecurity and poverty.

However, African women farmers operate within a cultural context with regards to access to land as a resource. Customary claims to land are often constructed on the basis of social differentiation and inequality. Amanor (2012) [29].

In Zambia, the government's extensive involvement in the marketing of maize grain and maize-meal provides an opportunity to understand the potential role of price stabilization policies on seasonal market participation by agricultural households. As in other developing countries, Zambian households experience food price instability. In the presence of credit and insurance market failure, commodity price instability can discourage investments and lead to inefficient resource allocation. Rashid (2007) [30]. The government also intervenes in commodity marketing via the Federal Reserve Agency (FRA) in order to stabilize maize prices.

In 2011, spending on the maize marketing activities of the Food Reserve Agency (FRA), the other major government agricultural sector initiative, accounted for most of the agricultural sector expenditures. Mason *et al.* (2013). The FRA, a parastatal strategic food reserve/maize marketing

board, buys maize at a pan-territorial price that typically exceeds wholesale market prices in major maize-producing areas. It then exports the maize or sells it domestically at prices determined by tender, at auctions, or administratively. In deficit production years, the Agency often imports maize and sells it to select large-scale millers at below-market prices. Studies have shown that the FRA's activities have raised average market prices and stabilized wholesale maize prices. However, what such studies fail to explain is how government maize marketing policies and subsidies may influence individual farmers' marketing behavior and the welfare effects thereof on women small scale farmers *ibid*. Similarly another case study showed that access to fertilizer subsidies, larger farm size, household size, age of the household heads, years of formal education, and ownership of livestock were significantly associated with participation in the maize markets.

On the credit aspect, Taylor, Zezza and Gurkhan (2009) ^[34], highlighted that Zambia's market for agricultural finance is fundamentally dysfunctional. From the farmers' perspective, credit is scarce and expensive and heavily skewed towards the larger, corporate sector and that Loan terms are often too short to accommodate the long-term nature of agriculture, and the processing of loan applications by banks often takes too long.

Female farmers face many other gender-specific barriers to accessing markets. They are unable to pay the high permit costs to sell their produce in the market, time burden that constraints them from seeking best prices, and competing with male farmers over crops that women have successfully cultivated. Market oriented interventions for women in agriculture will be more effective if they also address gender norms. Oftentimes, women have difficulty accessing markets as companies assumed that men are the primary producers in the household and are more prone to approach men, *ibid*.

As a means of countering these challenges, there has been an emphasis of creation of cooperatives as a means of up scaling farmer's efforts penetration into the market. Cooperatives have over the years been used as means of contributing to alleviating poverty especially in rural areas. This is because they are designed to be business models, its members often than do not fully benefit from being entrepreneurs. Government and the private sector have over the years used these channels to assist smallholder producers' increase their production, and contribution to economic development.

Often time's cooperatives lack funds for investment as most finance agencies have stringent rules on loans of which the cooperatives are unable to qualify. Some donors have responded to this challenge by continuing to help in increasing cooperatives access to finance in a range of ways such as providing revolving loans funds, bank guarantees, or equity capital. In addition, in view of adding value, the cooperatives also try to raise funds by joint pooled resources however these funds are not enough to invest, Rao (2016) ^[37].

At times the access to finances and capital is overtaken by lack of access to information. Information is cardinal in development, cooperatives inclusive. The lack of information on product prices, available markets, makes producers and cooperatives prone to exploitation.

In agriculture, new information and knowledge fuel innovation and increase productivity and competitiveness.

The ability of farmers to participate in and benefit from growth in the sector is linked to their ability to adopt new practices, solve problems and embed themselves dynamically in agricultural value chains. This is why information and communication have always mattered in agriculture. Ever since people have grown crops, raised livestock, and caught fish, they have sought information from one another as a means of ensuring productivity. What is the most effective planting strategy on steep slopes? Where can I buy the improved seed or feed this year? How can I acquire a land title? Who is paying the highest price at the market? How can I participate in the government's credit program? *ibid*. These and many more, are most frequently asked questions by farmers in general.

There is need for farmers to be connected to the communication channels through which appropriate information is flowing. Manfre and Nordehn (2013) ^[38].

Farmers currently access information through a complex web of social networks that include other farmers, family members, extension agents and input supply dealers. Yet for many farmers, these networks lack the type of information that can help them to move confidently into more productive strategies.

Furthermore, weather information is particularly important for most small farmers. Rainfall information is critical at certain key junctures of the cropping cycle – during planting, for timing the application of fertilizer/pesticide, and during harvesting/storage. Information on how to diagnose and treat disease is important for farmers. Plant disease, which could wipe out the entire crop, is one of the biggest challenges that farmers face, *ibid*. This need for information covers seed varieties, fertilizer, pesticides, weed killers and other plant remedies. However, farmers seldom find the much-needed answers to such questions, and even if they do, it is often scanty and from a lay man's perspective. Interestingly, women farmers in the United States are said to be using social media to reach consumers, seek agricultural information and maintain emotional connection with other farmers. A study carried out in the US revealed that the use of user-generated media, especially social media, provide agriculturalists free and practically instantaneous channels through which to engage with their audience members, hence making marketing of their produce easier, Doerfert *et al.* (2014) ^[39].

Similarly another study, revealed that most farmer's personal use of social media was highly correlated with their business use. Abrams and Sackmann (2014) ^[40]. Most of their time on the internet was spent finding farming information, and finding and interacting with customers. The study also found that the more face book page likes their farm had, the more the revenue they had.

The use of ICTs to promote the expansion of local markets, and provide direct access for women producers to international markets and productive resources is proving beneficial to the agricultural sector in the West. This is because ICTs provide easy access to a range of information on likely markets planning and management techniques of various crops and plants. It is a powerful tool in production and marketing system. It affords inexpensive access to vast amount of information and networks, access to market information and the ability to directly access lucrative markets as shown in the studies just cited.

The explosion of new information and communication technologies (ICTs) onto the agricultural development scene

offers an opportunity to extend the reach of current information systems. ICTs can amplify the efforts of extension and advisory service providers in disseminating various kinds of information to large, dispersed audiences. ICTs offer the opportunity for rapid and cost effective dissemination of agricultural information to remote locations and to diverse populations.

They make it possible to deliver near real-time information on weather, market prices, disease and pest outbreaks, and the availability of services, allowing farmers to make more informed decisions on what to grow and how to improve their agricultural practices. Content can be delivered in audio, visual and written formats to reach farmers with varying levels of education and literacy. The possibility that ICTs can extend the reach of existing information channels also means that they can be used to limit barriers that limit women farmer's access to information, (*ibid*).

Most developing countries access to information may not be as technology savvy as in the West. This is because governments and the telecommunications sector do not prioritize infrastructure in rural areas because the population is generally poor and dispersed. Providing such knowledge can be challenging, due to various reasons such as poor infrastructure, limited capacity and skill by extension workers, as well as lack of adequate funding to the appropriate ministries responsible for providing oversight of this crucial sector.

Developing Countries have been negatively impacted by lack of transport infrastructure investments, a lack of capacity, managerial deficiencies, a lack of coordination between modes and challenges in supporting national and international distribution imperatives. Rodrigue (2016) [41].

This is despite globalization being associated with rising mobility of passengers and freight and spurring investments in the development of ports, airports, railways, highways and telecommunication systems across a wide range of countries and contexts.

However, the differences between developed and developing countries are that there is a gap of opportunities and access of communication technologies in developing countries in main applications and facilities of information and communication technologies in their areas especially in rural areas where people have no access, Mardani *et al.* (2011) [42].

However, because the highly localized nature of agriculture means that information must be tailored specifically to distinct conditions.

The situation is compounded because women do not know where to find this information. Access to information and the creation of knowledge are key drivers of social and economic transformation. In agriculture, new information and knowledge fuel innovation and increase productivity and competitiveness. The ability of farmers to participate in and benefit from growth in the sector is linked to their ability to adopt new practices, solve problems and embed themselves dynamically in agricultural value chains. Farmers, most especially women, need to be connected to the communication channels through which appropriate information is flowing. Farmers currently access information through a complex web of social networks that include other farmers, family members, extension agents and input supply dealers. Yet for many farmers, these networks lack the type of information that can help them to move confidently into more productive strategies.

Studies carried out in Abuja, Nigeria revealed some of the constraints to use of ICTs to be language barrier, high cost of services, poor and expensive connectivity, erratic power supply or altogether the absence of electricity. Dyaji *et al.* (2022) [43]. The language barrier was cited as a major problem of the respondents as indicated by 100% response. This is as a result of the common use of English Language by the providers of ICT information as advice. Again, information is not transmitted in their local language. In an interview with some women leaders, it was said that absence of power supply and erratic power supply prevents them from charging their phone battery and other devices requiring power.

Farmers also use mobile phones to gain specific information, such as how to treat a plant disease. The farmer will call the extension agent and describe the symptoms and receive advice over the phone. In some cases, the extension agent will then visit the farm and recommend a treatment. Calls are also made to middlemen to inquire about market prices and to others including customers, buyers or transporters. By calling people within their networks, farmers can connect with buyers and other actors to sell their products in a timely manner and gain specific or general information to improve their farming business.

This supports a study by Alemna and Skouby (2000) [44], that there is need to repackage information to meet the information needs of rural people in Africa and that oral transmission should take the form of group discussions. In Zambia, road shows tend to reach a wider female audience and are therefore a more appropriate channel to reach both female farmers and other potential farmers. While smartphones are a fast and far-reaching tool for the dissemination of information, and therefore useful and cost-effective for disseminators, they are less accessible to and controlled by women. Female fish farmers may thus not be able to communicate with extension officers and make appointments by phone and may be less exposed to urgent information such as heavy rainfall alerts. As women are less likely to be reached through telephone and digital dissemination channels, disseminators resort to accompanying methods such as field visits and physical meetings. The challenges outlined in other developing countries are thus similar to those highlighted by *Zambian Women Farmers*.

A study conducted on women farmers under the Aquaculture sector in Northern Province, interestingly found that despite claims to empowerment of women farmers, most cooperatives and farming blocs do not really mean well for this gender, Amideai, Danso and Vogel. The study found that when asked about their gender inclusion strategy, all SMEs mentioned their commitment to targeting women and youth in their extension programs, for instance by interacting with women and youth farmer clubs. However, findings on the ground revealed that it is in the interest of SMEs to showcase that they are inclusive in their outreach to fish farmers, especially as government policy requires CIS to target at least 30% of women. However, SMEs are interested in enhancing their business and gender inclusion may not be their ultimate priority in actual fact.

Information is essential for facilitating agricultural and rural development and bringing about social and economic change. Unfortunately, most African countries have not devoted adequate attention to providing their citizens with access to information, especially in rural areas, where

7080% of the African population lives. Information initiatives should, therefore, be geared to strengthening the grass roots, with special emphasis on women, and be developed in places without public libraries or other information resources.

By the use of communication technologies and government services the farmers can save the time, energy and money similarly they can connect to buyers for selling their product good and service. The mobile phone one of the best ways of communicates directly with market buyers and producers and could get information about weather, market use of pesticides and other agricultural related information from expert. Mobile phones and wireless technologies could use for dissemination the information at crucial time and can provide information regarding agriculture, as well as any crisis happening in rural areas. Verma (2013) [47].

Methods and Procedure

A qualitative approach was used in the research, rather than a quantitative approach, because data gathered from the qualitative approach allows for detailed descriptions, and provides an explanation of processes occurring in a defined context. In this research, a detailed description of the situation of smallholder rural women farmers in Chipata was necessary in order to establish the empowerment levels and impact. The process of establishing the realization of objectives set out in the policy would require qualitative responses to ascertain whether or not the women small scale farmers feel empowered, and to what extent. Therefore a qualitative approach was deemed most appropriate.

Qualitative data is able to reflect chronological flow, connecting events to consequences, while giving fruitful explanations *ibid*. These attributes of the qualitative approach were deemed important in this research because the research sought to show the situation faced by rural smallholder women farmers before and after the implementation of the second National Agricultural Policy. Therefore, the chronological flow of events before and after the commencement of the policy was enacted as well as the consequences of the implemented objectives, will help tell a story.

The research design can be likened to a blueprint such as that used in the design and building of a house. Its function is to guide the construction process. Mouton (2001) [49].

Therefore the function of the research design is to guide the research process of a given project. Given this definition, the research design has to be influenced by the kind of study or project that is to be undertaken and the results that the researcher is seeking. In the research design consideration should be given to the kind of evidence required to adequately respond to the research question, *ibid*.

The purpose of research largely determines not only the design to be selected but also the measurement and analysis to be used. Patton distinguishes between different types of research based on their purpose, such as; (i). Action research, which focuses on solving a particular problem; (ii.) basic research, which focuses on contributing to knowledge and theory; (iii.) summative evaluation, which aims to determine program effectiveness; (iv). Applied research, which seeks to throw light on a societal concern (v.) formative evaluation which seeks to improve a program, Patton (2002) [50]. However there is no one perfect research design and trade-offs must be made due to real life limitations such as the time available to conduct the study.

In order to select the right research design, I needed to consider the questions that the research sought to answer; firstly, from the literature what are the issues that rural smallholder women farmers face in accessing agriculture markets and agricultural information, as well as technology adoption? Secondly, how has F.I.S.P addressed the issues faced by women small scale farmers? The formulation of these questions gave clarity as to the kind data to be collected, that is, data on women's challenges as well as their experiences as small scale farmers.

In order to find this data, a literature review seemed the most appropriate research design because it gave insight into the questions and an overview of the issues around rural smallholder women farmers. Secondly, a case study approach was selected in order to provide real life empirical information on the issues that small scale women farmers face in accessing markets. This is because a case study would provide in-depth information, and also lend credence to the issues found in the literature. Hence the resultant research design used two approaches.

Theoretical Frame Work.

Previous research shows a strong connection between economic development and women empowerment. Anchored on the "Empowerment Theory" forwarded by Mayoux 2005, the study will probe the concept of women empowerment and enablement through enhancement of capabilities. According to this theory, women empowerment can be achieved by providing access to both financial capital assistance and nonfinancial services Mayoux 2005.

Input mobilizations and micro training for purposes of enhancing social capital could be pivotal in attaining women empowerment in the agricultural sector. However, in as far as the concept of empowerment, goes, much more is needed to actualize this theory. Similar to the Human Development concept, the empowerment theory seeks to enhance the capabilities and thus expand the freedoms of the beneficiaries of that empowerment. Drawing on Kabeer (1999, 2017), we consider women's empowerment as the ability to make or express strategic and meaningful choices and decisions related to one's own life noting that positive economic outcomes are generally associated with social empowerment (e.g. supportive community norms) and psychological empowerment (e.g. efficacy or self-perception). The approach to women's empowerment assumes that if their practical and psychological needs are addressed, women will be enabled to challenge gender inequity in ways they see fit and that the alleviation of household poverty and the enhancement of well-being and women's empowerment are inherently synergistic and achievable as a win-win process (Mayoux, 2002).

However, Rigaud 2019 critiques the empowerment theory by describing it as being too subjective in that individuals are assumed to understand their own needs better than anyone else. This may be true in some instances as communities may not always be right in their assessment of what needs are to be prioritized. Their valuations may be biased towards debilitating cultural practices. Mayoux 2005 remedies this quagmire by asserting that empowerment theory's ultimate objective is creation of self-sustainability among women as it encompasses both outcomes and processes of empowering people or groups to develop skills and obtain resources to solve problems affecting them. Through the process of dialogue, it becomes possible to

reach an agreement that is progressive from both parties' perspectives.

Zimmerman, 1995 states that empowering processes in a community include an open governmental system that takes citizens' attitudes and concerns seriously, and includes strong leadership that takes advice from the community and help. Additionally, the philosophy is wary of the intrusion on basic human rights such as access to nutrition, respect, health care, education and independence in decision-making (Mayoux, 2005).

Chant & Brickell, 2014 assert that access to income does not necessarily enhance the ability to control household resources or to achieve other rights or liberties. This is because development initiatives that focus on women to make an income or take a loan have not challenged patriarchy, nor changed the norms that support it. Resource empowerment alone cannot create the enabling environment that confirms the right to work, to property, to voice, or to freedom. The empowerment theory is thus premised on processes where one's attempts to gain control, obtain needed resources, and critically understand one's social environment are fundamental, Zimmerman (1998).

Furthermore, in agreeing with the Mayoux perspective, the human development viewpoint relates women's empowerment to cultural practices of capacity building through education, training and development, Inglehart and Wezel, 2005. Various literature agree that positive economic outcomes are generally associated with social empowerment premised on supportive community norms as well as psychological empowerments that promote efficacy or self-perception, Brody *et al.*, 2015. There are benefits of improving women's empowerment in and of itself, and that there are important non-economic domains of empowerment.

This theory is applicable to this study in the sense that it will probe the significance of government interventions in enhancing women farmers graduate from small scale farming to commercial, not just through agricultural inputs, but associated services such as financial credit. The study will not only dwell on the program outcomes, but aspects of inclusivity, participation and transparency in the processes leading to the outcome.

Target Population

The focus of the study is the empowerment process and outcomes of women small scale farmers under the Farmer Input Support Program. As such, the Author found it prudent to limit participants to the women farmers who are direct beneficiaries of the Farmer Input Support Program.

Sampling Design

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, Patton (2002) ^[50].

In order to select the participants for the study, a purposive sampling approach was done in order to identify what Patton (2002) ^[50].

Calls typical case samples. Typical case sampling involves selecting cases that show or describe what is typical about the participants in the area of study and is illustrative rather than definitive *ibid*. In this study, the sample was defined by the cooperative used as a case study. It would have not been

feasible to involve all of them in the study due to time and resource constraints.

Sample Size Determination.

Based on the nature of this study and its purpose, a minimum sample of 50 small scale women farmers was selected.

Data Collection Methods

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) ^[52].

The researcher provides the questions and the respondents provide the answers. Although the researcher was aware of occurrences of misunderstandings including the fact that participants had limited knowledge on how to read or write, the self-administered questionnaire was the only inexpensive means that the searcher 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.

Focus group discussions are useful in data collection as they give an idea of whether there is some agreement and shared opinions in a group of people, in relation to a given topic. The group discussions helped gauge the existing market access issues and the consensus of how the National Agricultural Policy was addressing these. The recommended size for focus group discussions is between six and nine people, although there can be more or less depending on the researcher's situation *ibid*.

Data Analysis

There are several methods of analyzing data depending on the research approach used. For instance, for qualitative approach, analytical induction, grounded theory and computer software such as computer assisted software e (CAQDAS) are some of the methods that can be used to analyze qualitative data, *ibid*. However, these were not chosen due to limited access. For this particular study, a Qualitative Data Analysis Approach will be used.

Triangulation

Triangulation is a research method that uses multiple methods or data sources to develop a comprehensive understanding of phenomena and to enhance the validity and credibility of the findings. Patton (2002) ^[50], identified four types of triangulation: (a) method triangulation, (b) investigator triangulation, (c) theory triangulation, and (d) data source triangulation. For purposes of this particular study, we will employ triangulation of sources and investigations.

Limitations of the Study

Sample selection may suffer from bias. Purposive sampling allows to reach a variety of respondents based on the researcher's judgments. The sample reflects the author's access to different categories of farmers. The small sample

does not pretend to be representative of the population of women small scale farmers in Zambia but aimed at generating insights on the empowerment outcomes of the women small scale farmers under F.I.S.P.

Ethical Considerations

Prior to the interviews, all participants were informed of the purpose, topic and use of the study by means of a consent form. To avoid our respondents’ identification, their names are not mentioned. Only relevant characteristics, namely their age, gender and marital status are noted. Furthermore, respondents were not offered any incentive or economic compensation and agreed to participate voluntarily in the study.

Findings

Presentation of results based on thematic area developed from objective one

Under this thematic area, the researcher probed respondents to help ascertain how policy is enhancing access to appropriate agricultural technologies for women small scale farmers. 9 questions were asked premised on the following issues; the farming technologies used by women small scale farmers, the effectiveness of those farming technologies, challenges faced by women small scale farmers when it comes to technology adoption, employment of extension workers help in adoption of new technologies, whether or not some technologies are accommodative towards their gender needs, whether or not there is need for adoption of technologies which are accommodative towards the female gender needs, how effective government programs such as FISP have been in enhancing adaption to more productive technologies, considerations by government for better access to and adoption of enhanced farming technologies for women small scale farmers, and which agency has been most effective in enhancing technological adoption.

1. The farming technologies used by women small scale farmers

Respondents were asked to list the most productive farming methods that they usually engage in. Various methods were outlined as follows; ridging, pot holing commonly referred to as “gampani”, and for tillage purposes, some used the ox drawn ripper tilling method, whilst others used the hoe. Out of 50 respondents, 28 said they use the ridging method using the hoe, representing a percentage of 56%. 19 out of 50 farmers said they use the potholing method using the hoe, representing a percentage of 44%. 3 out of 50 respondents cited using the ox drawn ripper, representing a percentage of 6%. The data is illustrated below;

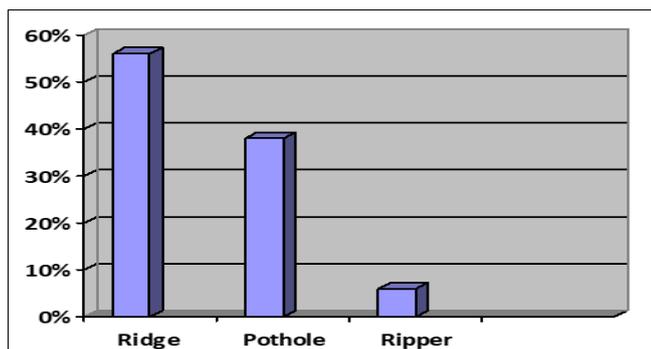


Fig 1: Farming Technologies used by Women Small Scale Farmers

1.1 Preference of local versus hybrid seed.

As a follow up, respondents were asked which type of seed they prefer to plant, as a means of establishing adaptability to new technologies when it comes to seed. 15 out of 50 respondents cited preference for the local seed, representing a percentage of 30%. 21 out of 50 respondents cited preference for the hybrid seeds representing a percentage of 42%. 14 out of 50 respondents were satisfied with either of the two types of seed. This represents a percentage of 28%. The data is represented below;

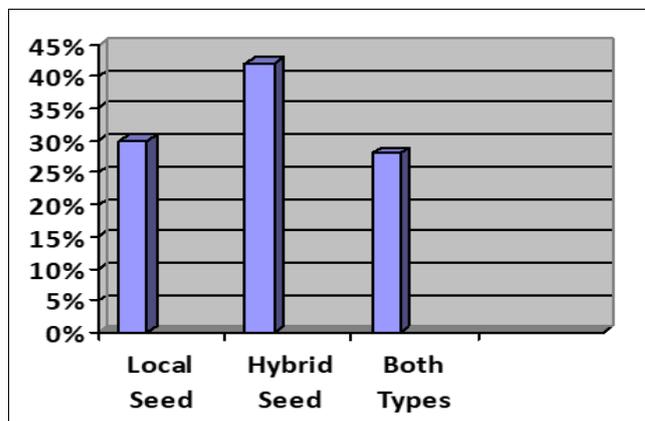


Fig 2: Seed most preferred

1.2 Obstacles to Technology Adoption.

Data was collected to determine main challenges faced by women small scale farmers when it comes to technology adoption. 48 out of 50 respondents cited lack of adequate funds as a main challenge in adoption of more efficient technologies. This represents a percentage of 96%. 2 out of 50 cited cultural barriers as a main challenge in technology adoption, representing a percentage of 4%. The data is illustrated below;

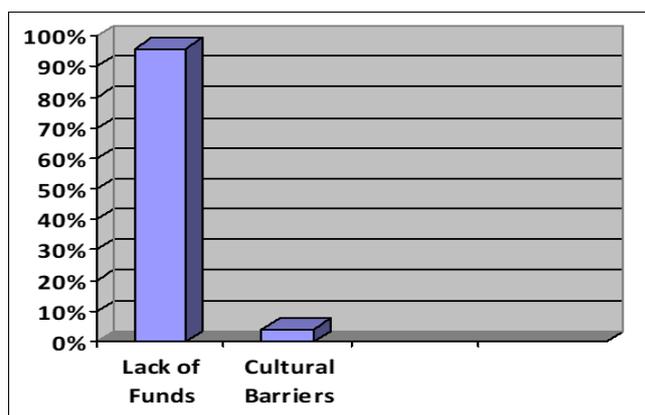


Fig 3: Obstacles to Technology Adoption

1.3 Which Government program has been most effective in aiding technology adoption?

Respondents were asked which government programs they thought most effective in adoption of new technologies. 12 out of 50 respondents cited FISP as being most effective, representing a percentage of 24%. 4 out of 50 respondents felt that CEEC was most effective in aiding technology uptake, representing a percentage of 8%. 12 out of 50 respondents felt that CDF was most effective, whilst the remaining 22 felt none of the listed programs was of effect.

This represents a percentage of 24% and 44% respectively. The data is represented below;

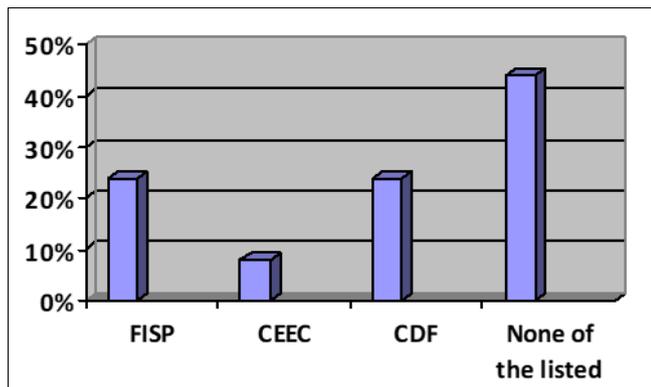


Fig 4: Government Program most effective in aiding Technology Adoption

1.4 Activity most beneficial to Adoption of New Technologies

Respondents were asked to gauge which activity has been most beneficial in aiding them adopt new farming technologies. 5 out of 50 respondents cited trainings they had received, representing a percentage of 10%. 43 out of 50 respondents cited listening to framing programs on radio as being the activity most beneficial in aiding their uptake of better technologies. This represents a percentage of 86%. 2 out of 50 respondents cited engagements with extension officers as being most beneficial in adoption of technology, representing a percentage of 4%. The data is represented below;

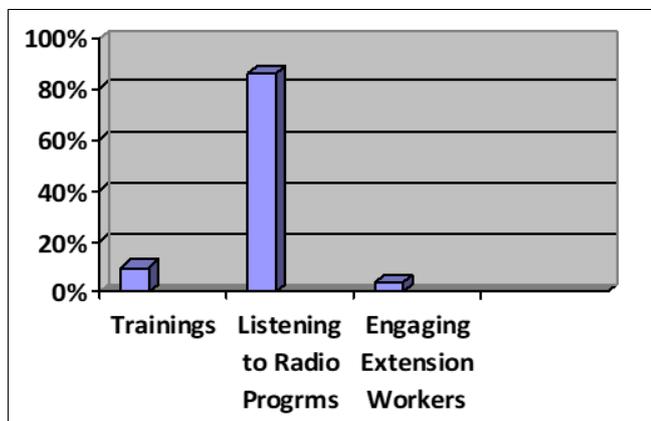


Fig 5: Activity most beneficial to Adoption of New Technologies

1.5 Gendering of farming technologies

The researcher wanted to ascertain how the NAP is gender mainstreaming technology adoption by asking respondents if they felt that the adopted technologies being supported under government policy were effective in being accommodative of their gender in regards their physiological needs. 32 out of 50 respondents said that they were not. Representing a percentage of 64%. 28 out of 50 respondents said that the technologies being promoted were accommodative of their gender needs. This represents a percentage of 56%. The data is illustrated below;

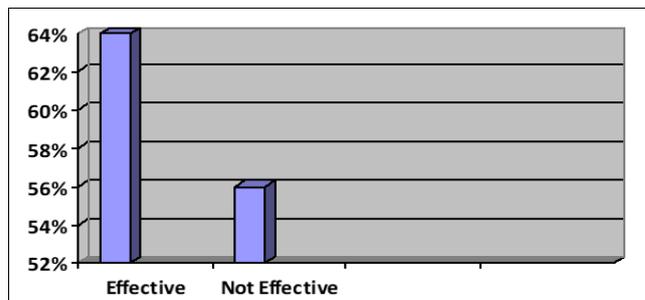


Fig 6: Gendering of Farming Technologies

1.6 Suggested Considerations by government for better access to enhanced technologies for women scale farmers

Data was collected to determine how respondents would like government to enhance adoption of more efficient technologies amongst women small scale farmers. 31 out of 50 respondents cited access to government loans as a means of empowering women small scale farmers have better access to better technologies. This represents a percentage of 62%. 13 respondents cited the need for more training to enable technology adoption, representing a percentage of 26%. 6 respondents cited the need for a deployment of more extension workers, representing a percentage of 12%. The data is illustrated below;

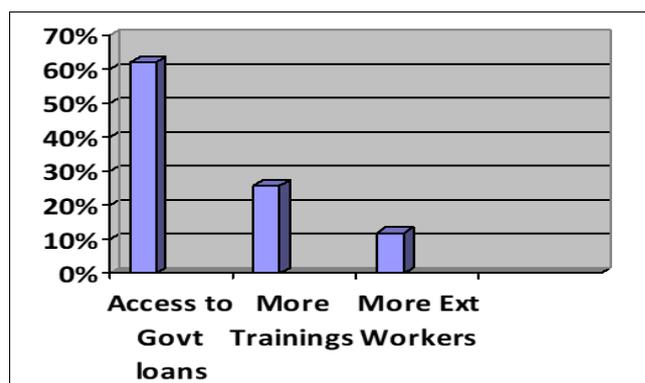


Fig 7: Suggested considerations by government for better access to enhanced technologies for women small scale farmers

2. Presentation of results based on thematic area developed from objective two

Under this thematic area, participants were asked various questions to help ascertain the efficacy of the National Agriculture Policy in helping Women Small Scale Farmers gain access to markets. Eight questions were asked in regards this thematic area and they addressed the following issues.

2.1 Government Programs Which have Enabled Access to Markets

To help ascertain whether or not government policies are enabling access to markets for Woman Small Scale farmers, respondents were asked which programs they feel have been most beneficial in aiding them access markets. 13 out of 50 respondents cited FISP as being beneficial in aiding them access markets, representing a percentage of 26%. 12 out of 50 respondents cited the e-voucher system as being most beneficial in aiding their access to markets. This represents a

percentage of 24%. 3 out of 50 respondents cited SAFF as being the government program most beneficial to helping them gain access to markets, representing a percentage of 6%. 22 out of 50 respondents felt that none of the available government programs has been beneficial in aiding them gain access to markets. This represents a percentage of 44%. The data is illustrated below;

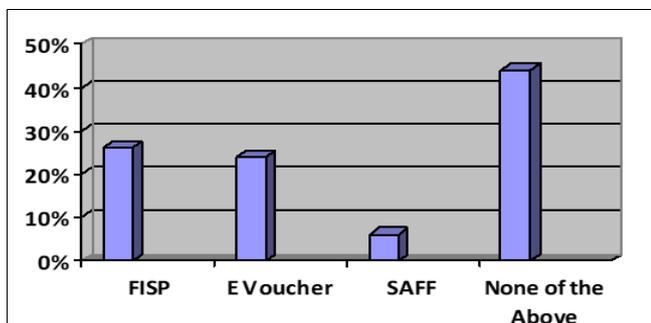


Fig 8: Government Programs most Beneficial in Aiding Access to Markets

2.2 Effectiveness of FISP in enhancing access to markets

The data collected from the small scale women farmers showed that 4 out of 50 felt that FISP has been very effective in helping women small scale farmers gain access to markets. This represents 8%. 35 out of 50 felt that the help FISP has been average, representing a percentage of 70%. Additionally, 11 out of 50 respondents felt that FISP has not been effective in helping women small scale farmers gain access to markets.

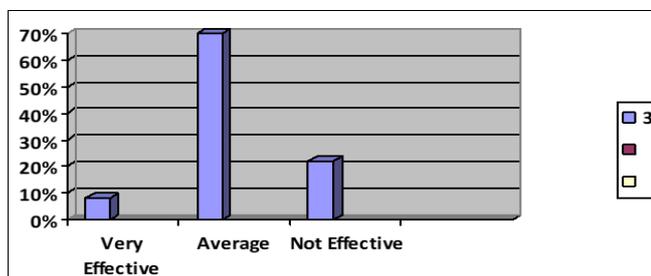


Fig 9: Effectiveness of FISP in enhancing markets

2.3 The Quality of inputs received under FISP

The quality of inputs used during the farming process has a determining factor on the quality of produce, which overly affects market outcomes. The data collected from this sample size indicated that 10 respondents felt the quality of inputs received under FISP was very good, representing a percentage of 20%. 32 out of the 50 respondents felt that the quality of inputs usually received was of medium quality, representing a percentage of 64%. 9 out of 50 respondents felt that the inputs are of low quality, representing a percentage of 18%. The data collected is represented below;

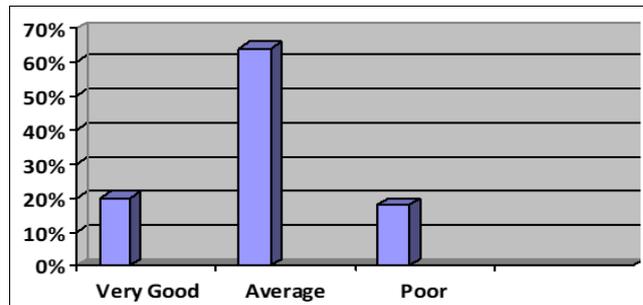


Fig 10: Quality of inputs received

2.4 The Quantity of Inputs Received under FISP

Data collected from respondents shows that 2 out of 50 felt that the quantity of inputs received under FISP is adequate. This represents a percentage of 4%. 13 out of 50 respondents felt that the quantity received is average, representing a percentage of 26%. 38 out of 50 respondents felt that the quantity often received is very little. This represents of percentage of 76%. The information obtained is demonstrated in the table and graph below;

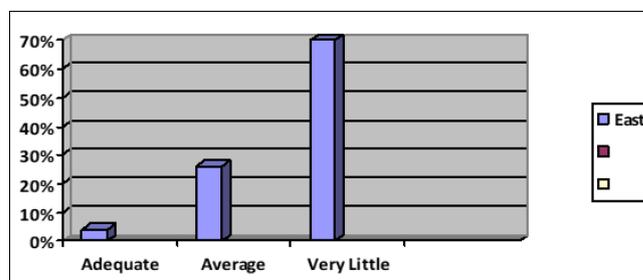


Fig 11: The Quantity of Inputs received under FISP

2.5 Challenges Faced in accessing markets.

The 40 respondents were further asked to state what they thought to be the main challenge that hinders them from accessing markets under FISP. 20 out of 40 respondents listed poor quality and quantity of inputs given under FISP. This represents a percentage of 50%. 8 out of 40 respondents cited lack of land ownership as the main barrier to attainment of the goals under FISP. This represented a percentage of 20%. 6 out of 40 cited poor marketing prices as their main challenge, representing a percentage of 15%. 6 out of 40 listed cultural barriers as a main challenge, representing 15%. The data is illustrated below;



Fig 12: Challenges faced in Accessing Markets

2.6 The need for access to credit facilities.

In order to have a deeper understanding of their marketing needs, the researcher felt it necessary to find out how much of a need credit facilities are for the small scale women farmers, premised on their views and personal experiences. 31 out of 40 felt it was a crucial aspect to their farming process. This represents a percentage of 77.5%. 9 out of 40 respondents felt it was not much of a need for them. This represents a percentage of 22.5%. This data is presented below;

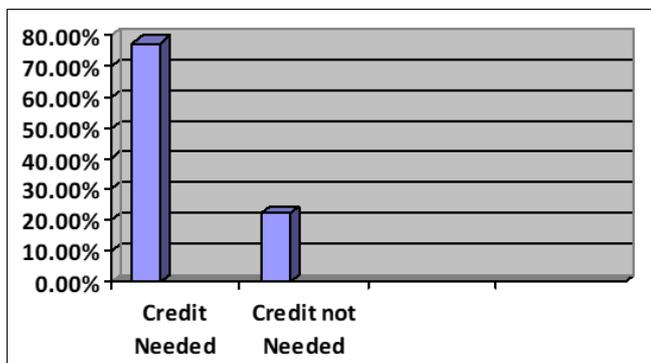


Fig 13: The need for access to credit facilities

2.7 Effectiveness of government efforts to enhance access to credit facilities

Respondents were asked how the NAP has helped them gain access to credit facilities vital to the marketing process. 9 out of 40 felt that the program has been very effective. This represents a percentage of 22.5%. 21 out of the 40 respondents felt that the program has been a bit effective, representing a total of 52.5%. 10 out of 40 felt that government efforts have not been effective in helping women small scale farmers gain access to credit, representing a percentage of 25%. The data is illustrated below;

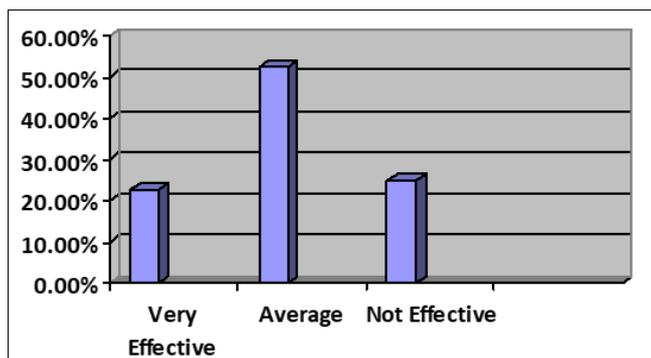


Fig 14: Effectiveness of government efforts to enhance access to credit facilities

2.8 Which Agency has been Most Effective in Enhancing Access to Markets

Data was collected to ascertain which agency has been most effective in enhancing access to markets for Women Small Scale farmers. This was done to help establish how big a role government policies and programs are playing when it comes to enhancing access to markets for the Women Small Scale Farmers. 20 out of 50 respondents cited Government Agencies as having been most effective in enhancing access to markets for Women Small Scale Farmers. This represents a percentage of 40%. 16 out of 50 respondents cited Donor

Agencies as having been most effective in helping the Women Small Scale Farmers access markets, representing a percentage of 32%. 14 out of 50 respondents cited Social Agencies, which could have been cooperatives, family members, or friends. This represents a percentage of 28%. The data is presented below;

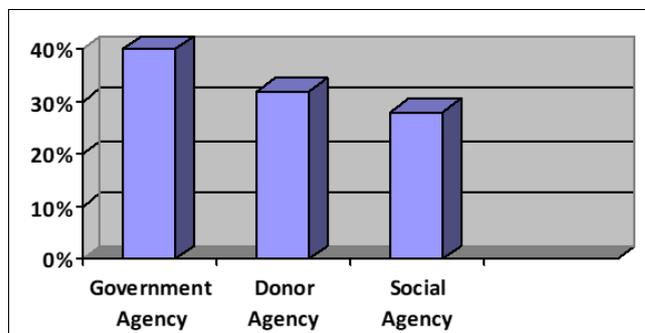


Fig 15: Most Effective Agency in Enabling Access to Markets

3. Presentation of results based on thematic area developed from objective three

Under this thematic area, respondents were asked question 8 questions to help assess how policy is promoting access to Agro – related information for women small scale farmers highlighting the following issues.

3.1 The main source of Agro- related information

Data was collected from respondents to assess what their main source of agro-related information is. 28 out 50 cited electronic devices such as Radios and T.Vs as their main source of information. This represents a percentage of 56%. 2 out of 50 respondents mentioned extension services as their main source of information, representing a percentage of 4%. 16 out of 50 said that social networks were their main source of agro related information, representing a percentage of 32%. These social networks consisted mainly of friends, spouses, and leaders in the community. 4 out of 50 respondents cited trainings received through the District Agricultural Office as their main source of agro-related information. This represents a percentage of 8%. The data is illustrated below;

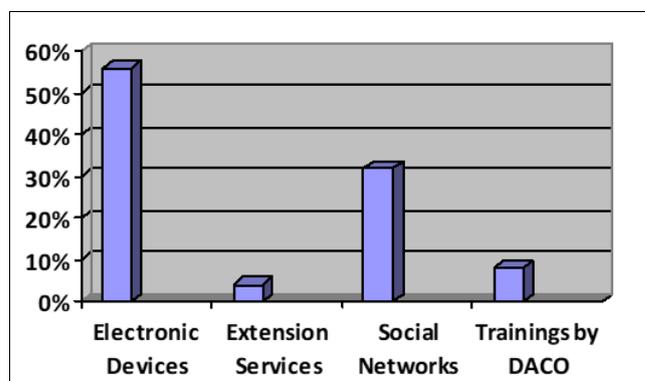


Fig 16: Main Source of Agro – related Information

3.2 Use of I.C.TS to obtain Agro- related information

Data was collected from all respondents to establish how many have access to Information and. Communication Technologies such as Radios, TVs. 39 out of 50 respondents said answered affirmatively representing a percentage of 78%. 22 out of 50 responded negatively, representing a

percentage of 22 % of respondents with no access to I.C.Ts. The data is illustrated below;

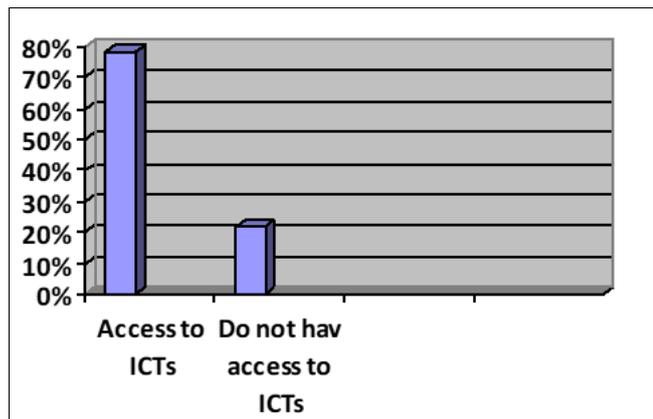


Fig 17: Use of ICTs in obtaining Agro-related Information

3.3 Frequency of Agro- related programs watched or listened to on a weekly basis

Data was collected to ascertain how many Agro related programs the respondents are able to engage through the TV or Radio for those who cited having access these ICTs. 6 out of 39 respondents said that they engage in 1-2 programs, representing a percentage of 15.4%. 28 out of 39 respondents affirmed to engaging in 3-5 agro related programs through their ICTs, representing a percentage of 56%. 5 out of 39 respondents said that they were able to engage in over 5 programs, representing a percentage of 12.9%. The data obtained is illustrated below;

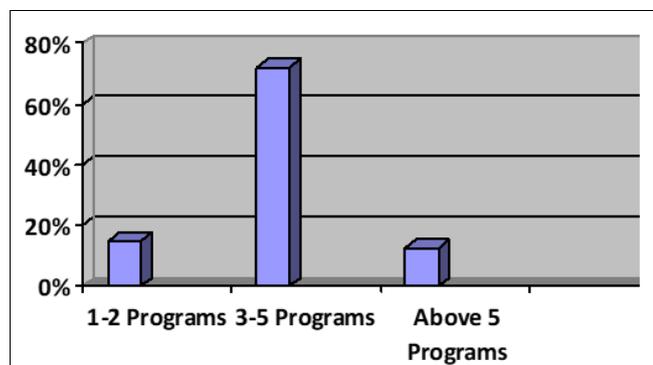


Fig 18: Frequency of Aro-related programs watched on weekly basis

3.4 Frequency of Access to Agro-related Trainings.

Respondents were asked how frequent they have access to agro-related information through trainings as a means to establish the efficiency of the trainings. 23 out of 50 respondents cited having access to trainings usually on a basis of once a year. This represents a percentage of 46%. 10 out of 50 respondents cited having access to agro related trainings 2-3 times a year, representing a percentage of 20%. 17 out of 50 respondents cited having access more than 3 times on a yearly basis, representing a percentage of 34%. The information is represented below;

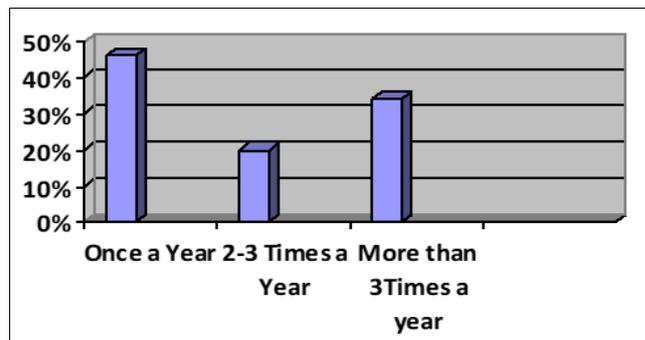


Fig 19: Frequency of Agro-related Trainings

3.5 Frequency of Engagement with Extension Workers

Data was collected to establish the frequency of engagement with the Extension Workers in accessing Agro related information. 21 out of 50 Respondents cited having access to Extension workers once a year, representing a percentage of 42%. 22 of the respondents cited having access to extension workers on a frequency of 2-3 times a year representing a percentage of 44%. The remaining 7 respondents cited having access to agro-related information through the extension officers more than 3 times a year. This represents a percentage of 14%. The data is presented below;

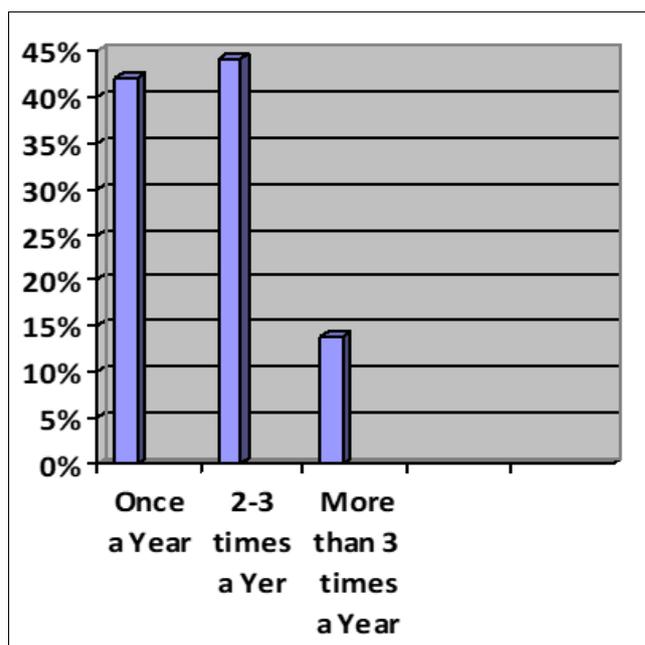


Fig 20: Frequency of engagement with Extension Workers

Conclusion

In relation to the first objective, to examine how policy is enhancing access to appropriate agricultural technologies for women, it was established that very little is being done to ensure adaptation and adoption by women small scale farmers. Lack of funds and adequate training remain the two biggest stumbling blocks in women small scale farmers accessing appropriate technologies.

In relation to the second objective, to investigate how policy is improving access to markets for women small scale farmers, it was established that the only way that the women small scale farmers feel empowered in this regard, is in relation to receiving of inputs. However, even this area has much to be desired due to a compromise in quality and quantity of inputs. This has necessitated for the women small scale farmers to become more self reliant in their quest to gain access to better markets.

In relation to objective number three, to analyze how policy is promoting access to Agro- related information for women small scale farmers, it was established that the small scale women farmers are more reliant on unofficial sources for their agro related information needs due to lack of accessibility to government channels of agro related information. Further, the use of ICTs in accessing of agro-related information is still at basic level.

In general the research findings show that whilst the women small scale farmers are very much dependent on government and its policies for their farming engagements, the help that they are getting on the other hand, is somewhat limited. These limitations have necessitated for them to come up with alternative means to self-empowerment in order to enhance their farming activities.

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May God El Roi, see all your contributions towards this journey and reward your efforts double.

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