

An Assessment of the Impact of Agriculture Financing in Promoting Rural Women Empowerment in Mumbwa District, Zambia

Dr. Chrine Hapompwe¹, Jacqueline Siwale², Mutinta Chinyama Muleya³

¹Senior Lecturer – Faculty of Social Sciences: Cavendish University Zambia

²Lecturer & Programme Co-ordinator-Texila American University, Zambia

³Postgraduate Student - Department of Development Studies: Cavendish University Zambia

Email address: ¹chapompwe @ cavendish.com.zm, ²jacquelinesiwale @ yahoo.com; ³mc46766 @ students.cavendish.co.zm

Abstract— The study's purpose was to assess the impact of agriculture financing in promoting rural women empowerment in Mumbwa District. The objectives were to assess availability of agro financing in promoting women empowerment in Mumbwa District; to evaluate the efforts of Central Government and the Private Sector in addressing the challenges of agriculture financing in promoting rural women empowerment, and to examine the extent to which Ministry of Agriculture through Research and Extension services impacts rural Women Agriculture empowerment in Mumbwa District. The research was both qualitative and quantitative in nature and the data collection methods used were questionnaires and interviews. The study employed purposive and stratified sampling techniques to create reliable comparable groups and presentation of the information was done in form of themes, frequency tables and charts. The sample size was 120 respondents drawn from Mumbwa District. They consisted of eight (8) female farmers and two (2) male farmers from each ward of the 11 wards and one (1) from the Banking sector, one (1) from Micro Finance Institutions (MFIs), one (1) from Community Development Office, one (1) from Zambia National Farmers Union (ZNFU), five (5) Camp Extension Officers and one (1) District Agriculture coordinator. The study established that most women were not aware of the agriculture financing empowerment programme in Mumbwa district and that they lack information pertaining to agro related financing within the district as it was limited to only a few women of about 37% against the whole population of women in the district. The study also ascertained that there was less effort by the Central government and the Private Sector in addressing the challenges of agriculture financing in promoting rural women empowerment in Mumbwa District. On the other hand, the study found out that there was little to no promotion of diversified extension messages from the Ministry of Agriculture through research and extension services for all categories of women farmers in Mumbwa District. Therefore, the study recommended that government needs to come up with deliberate policies that favor women empowerment in the agriculture sector such as micro finance access without collateral requirement. The Ministry of Agriculture in conjunction with the private sector should promote diversified extension messages for all categories of women farmers in relation to agro financing as a tool for women empowerment. On the other hand, there was need for government's collaboration with other Cooperating Partners to mobilize resources in order to develop cost-effective, demand-driven research and extension linkages focusing on access to agro finance as a tool for rural women empowerment in Mumbwa District.

Keywords— Assessment, Impact, Agriculture Financing, Promoting, Rural Women, Empowerment.

I. INTRODUCTION

Agriculture remains the primary livelihood and source of employment for an estimated 66–80 percent of Zambia's population. Both agriculture and agribusiness have great potential in Zambia given the country's good soils, water, and climate. In recent years, yields of most crops have been rising, and they will rise further if Zambia realizes its considerable prospects for improving agricultural productivity. Continued economic growth and an expanding urban population will increase Zambia's demand for food. For these and other reasons, the government assigns high priority to agriculture. Agricultural households still concentrate primarily on producing food for their own consumption rather than on income-generating agricultural activities. Most farms in Zambia are small—72 percent of households cultivate less than two hectares annually—and do not occupy the most fertile land with the best water supply. The main challenges for these households—and agriculture as a whole—are low productivity, poor access to markets, the limited size of markets, high production costs (especially input prices), high cost of finance, relatively low investment by the private sector, and very low investment in research—compounded by land fragmentation, environmental degradation, and climate change (Tembo and Sitko 2013). For instance, although the use of fertilizer has been increasing, only about 55 percent of Zambian farmers use this input, and most of it is applied to maize. Although crop yields appear to be rising, they still remain well below global averages.

The significant role that women play in rural areas when it comes to rural agricultural productivity cannot be over-emphasised. It is them who help in increasing food abundance in the country of Zambia and across the world (Raney, et al., 2011). However, it must be noted that the majority of these women in Zambia are just peasant farmers who just do farming for hand to mouth and they do their farming with no proper financial empowerment from anybody (Neubert et al., 2011). The government of Zambia only provides subsidized agricultural inputs such as fertilizer and a seed which targets only the few vulnerable in the country's farming communities (Mason, Jayne, & Mofya-Mukuka, 2013).

Most rural women in Zambia communities have continued lacking access to financial agricultural empowerment in their

sincerest desire to do proper farming and escape poverty (Ligon & Sadoulet, 2007). Globally, the agricultural sector engages more than 2.6 billion of the 3.1 billion rural populations (World Bank, 2017) while in Zambia about 89.4% of households in rural areas engage in agriculture activities compared to 17.9% of households in urban areas (World Bank, 2015).

In Zambia, access to agriculture financing in promoting rural women empowerment is very limited and it is far behind to achieve it as women in Zambia are perceived not to be suitable to do rigorous agricultural production. In other words, farming in Zambia is considered to be for men and not much for women (White, Finnegan, Eija, & Po, 2015). Researchers have pointed out that traditional gender roles in Zambia with regard to agriculture are distorted as a result of the formulation of certain policies by the administrations (Farnworth, Akamandisa, & Hichaambwa, 2011)

Reducing gender inequality is widely recognised around the world as a way of contributing to agricultural growth and the attainment of food and nutritional security (World Bank, 2014). More specifically, many international development programmes such as the United States Agency for International Development (USAID) which also operates in Zambia, perceive women's empowerment as a key factor in closing gender gaps in agricultural productivity (Wekwete, 2014). On the other hand, FAO (2018) postulates that although some successes were scored in the way of reducing the gender gap in the agricultural sector it is still evident.

A. Problem Statement

Zambia is endowed with the total land area of 39 million hectares which is potentially good for agricultural production. However, most of this arable land is still virgin land with no farming or other activities is taking place in most of the country in order to increase the contribution of the agricultural sector to the growth of the economy (CSO, 2016). The agriculture sector offers potential to contribute significantly to national GDP through producing a diversified range of products for the local and international markets (Chapoto and Stiko, 2015:126). However, current and past agricultural development policies have favoured investments in maize production and even the area currently being utilized for agricultural production is characterized by low productivity. This may be due to pervasive constraints such as lack of financing empowerment, agricultural knowledge and inputs, poor access to services, low infrastructural development and poor access to proper markets (Calzadill, *et al.*, 2009).

The impact of agriculture financing in promoting rural women empowerment in Zambia is not clear as many women are still behind in comparison to men when it comes to agricultural-related activities. Men, women, boys and girls still divide farming roles according to the local systems of sexual division of labour. Little or no much research has been done on the impact of agriculture financing in promoting rural women empowerment in Zambia even though the government in power has introduced different policies related to equity and equality in the agricultural sector, some of which have led to changes in traditional gender roles in farming.

B. Objectives

- To assess availability of agro financing in promoting women empowerment in Mumbwa District, Zambia.
- To evaluate the efforts of central government and the private sector in addressing the challenges of agriculture financing in promoting rural women empowerment in Mumbwa District.
- To examine the extent to which Ministry of Agriculture through Research and Extension services impacts rural women agriculture in Mumbwa District.

II. THEORETICAL REVIEW OF LITERATURE

A. General Introduction

Research has also shown that empowering women can lead to improvements in their status both inside and outside the household—including greater control over household resources; better mental health; reduced time constraints; and increased access to financial services, health care, skills development, income-earning opportunities, information about markets and legal rights—all of which may, in turn, positively impact agricultural productivity, nutrition and food security (Smith, 2013). Hence, promoting gender equality is a major focus of rural development policy that aims to achieve sustained food security and poverty alleviation in agrarian economies, including those in SSA (Akpan, 2015). With specific respect to SSA, therefore, understanding the role of women's empowerment in agriculture is important for policymakers and development partners interested in devising more effective interventions to increase agricultural productivity enhance household and national economic growth, achieve food security, improve nutrition, and reduce poverty.

B. Agricultural Financing and Rural Women Empowerment in Zambia

Rural and agricultural finance in Southern Africa, and beyond, remains a major challenge for the financial and developmental sectors. There are many reasons why poor rural households cannot access the financial services that could improve their lives and livelihoods, and many reasons why financial service providers do not adequately serve this large section of Zambia's population. Lack of knowledge, understanding and financial confidence among poor rural consumers combined with the high cost and logistical challenges of serving scattered rural populations exclude many poor people from the financial sector (FSDZ 2020).

The relatively poor and dispersed nature of the smallholder farmers and rural households and the volatile nature of rural and agricultural income streams presents considerable challenges for financial service providers. The prohibitively high costs of offering conventional, branch-based services in remote rural areas demands creative thinking and innovation in both products and delivery of those products. Efforts to provide rural financial services have often been unsuccessful, chiefly for reasons of poor product design, development and delivery that fails to meet the needs of this very large market segment (*ibid*).

Financial Sector Deepening Zambia (FSDZ) is working with financial service providers and smallholder farmers to address these issues. We work to develop the capacity of financial institutions to design, pilot and scale appropriate agricultural and rural financial products and services and also work with smallholder farmers and poor rural households to build their understanding of financial services. We work to effect market change in a sustainable way through investment in infrastructure, coordination, capacity building, advocacy, innovation and information support functions (FSDZ 2020).

A lot has been written about the important roles played by both sexes in the farming communities of different countries around the world. However, no comprehensive piece of work exists on gender in agricultural development in Zambia. This failure to adequately document issues of gender in agricultural development has created a gap in the country's agricultural historiography. Our argument is that, like in other parts of the world, both sexes contributed greatly to Zambia's agricultural development. A recent study by World Bank (2018) revealed that agriculture is a critical sector in the Zambian economy but it has not sufficiently supported poverty reduction in rural areas. The agriculture sector employs 48 percent of the working population but its contribution to the country's gross domestic product (GDP) averaged just 5 percent between 2014 to 2018.

The significance of her work to our study lies in the fact that her conclusions were similar to findings on Zambia where gender roles in some farming communities were distorted after Britain colonised the territory. Like Mexico, the introduction of tax payments in Zambia set into motion migrations en masse of able-bodied men to employment centres in search of money to fulfil tax obligations. Consequently, women in such communities were burdened with greater agricultural responsibilities.

C. Promoting Rural Women Empowerment through Agriculture Financing

Access to financial empowerment by the poor farmer enable them to acquire new machinery, improved seeds, fertilizers and other necessary inputs needed to expand the scale of production (Akwa-Sakyi, 2013). Additionally, Access to financial empowerment enables poor rural farmers to venture into new areas of economic activities, broaden their sources of capital and manage shocks and stress that are unavoidable and difficult to mitigate for (Ahma, 2010). Other than increasing farmer's agricultural productivity and income, Access to financial empowerment accord rural households the opportunity to have access to improved health and education services and in turn improve their social well-being.

Furthermore, access to financial empowerment could raise the income status of the low-income rural households during off farming seasons or after poor harvest (IFAD, 2007). This is because it would allow them to engage in economic activities such as small business trading in fish, poultry, etc. Additionally, credit may be used as a tool to bridge income disparities between smallholder farmers and large holder farmers. Oyateye's (1980) argues that persistent case of low productivity leading to low income and saving capacity of

poor rural farmer could only be offset when Access to financial empowerment facilities is guaranteed. Additionally, Access to financial empowerment improves the capacity of the smallholder farmers to have access to extra labour and help in strengthen their asset building capacity.

On the other hand, some studies show that financing agriculture in promoting rural women empowerment has no impact on the agricultural output and agricultural productivity (Oyakhilomen et al., 2012; Musuna & Muchapondwa, 2008). While, some studies (Hussain, 2012); (Sriram, 2007); (Sjah, et al., 2003); (Zuberi, 1986)] conclude that the impact of financing agriculture in promoting rural women empowerment on agricultural output cannot be directly established. But commenting on the importance of credit, Sial (2011) postulated that improved seeds, tractors, fertilizer and biocides that may be acquired using credit money play an important role in agricultural production and these can be directly influenced by the availability of financial support. Hence, the literature on the impact of financing agriculture in promoting rural women empowerment on agricultural output seems to be inconclusive.

D. Agriculture Policies and Women Empowerment

Frederickson (2010) postulates that when the British South Africa Company took over the administration of the territory (Zambia), little was done in the way of promoting African agriculture. Rather, it was supporting settler agriculture. It was during the reign of the Crown government, precisely in the period after the Second World War that attempts were made to foster the development of African agriculture (Frederiksen, 2010). However, the Crown government did not perceive females as farmers and therefore, the policies put in place did not take into account the roles and responsibilities of men, women, boys and girls in the agricultural cycles of their communities (Frederiksen, 2010). Its primary interest was incorporating males and not females into the country's agricultural development (Frederiksen, 2010). Therefore, even now those policies rule over the country, gender imbalances in the country's agricultural sector are still high (Country Gender Assessment Series: National gender profile of agriculture and rural livelihoods, Zambia, 2018).

Currently, the pre-dominant agricultural practice among most ethnic groups of Zambia is shifting cultivation which is a form of migratory farming (Grogan, Birch-Thomsen, & Lyimo, 2013). In this farming practice, men's roles are restricted to tree cutting and turning of virgin soil although they sometimes helped with other stages in the agricultural cycle (Grogan, Birch-Thomsen, & Lyimo, 2013). Women do the weeding, planting as well as most of the harvesting. In certain instances, however, men do help out with weeding when the ground is over-grown with weeds (Grogan, Birch-Thomsen, & Lyimo, 2013). During peak seasons, entire households do participate in weeding and harvesting (Grogan, Birch-Thomsen, & Lyimo, 2013). Permanent cultivation is practiced in the Barotse Plain of western Zambia where removable dry season gardens are made in the seepage areas (del Rio, 2014).

Mwansa (2017) postulates that ethnic groups of Mumbwa District of central province of Zambia, like other ethnic groups are observed a rigid sexual division of labour in farming. Among the Ila for example, the basic agricultural division of labour is that after men clear the trees with axes, women plants, cultivates and harvests the crops using hoes (ibid). The government supports gender-sensitive research and extension but in practical terms government agencies have limited knowledge and evidence of the role played by women in agriculture, and very little data are collected on women's agricultural activities by subsector. This fundamental lack of information perpetuates the limited understanding of barriers to women's participation in agriculture and agribusiness.

E. Theoretical Framework

The current study is informed by the *capital constraint model*. This model is often used to describe how financial institutions, particularly banks, behave to restrain advancing loans to borrowers because of the limitation in the available financial resources from the bank. This problem arises because commercial banks are subject to market and capital requirements imposed by the Central Banks. Banks are required to maintain their capital at a certain level set by the central bank of the country (Obamuyi, 2007). In Zambia, the liquidity ratio to deposits for commercial banks is pegged at 50.38% as of 2016. Thus, banks are limited to providing loans to agribusiness entrepreneurs because of the nature of their operations and the fact that they are fragmented. This model is very important in understanding the supply side of the financing agriculture in promoting rural women empowerment in the Zambian agricultural sector.

Additionally, traditional financial institutions are unwilling to serve the poor because they lack physical collateral (Li et al., 2011; Al-azzam et al., 2011). With the presence of information asymmetry and incomplete markets, poor households are not likely to get the amount of money they demand at the correct price (Magri, 2002). The tradition economic models posit that interest rate (cost of capital) which tend to bring the credit market into equilibrium, fails to work in the imperfect market conditions. Increase in the interest rate because of information asymmetry is likely to attract the riskiest farmers (adverse selection) or induce farmers to implement the most difficult projects with the greatest return variability (moral hazard). Thus, this gives rise to two problems; adverse selection and moral hazards.

Financial institutions have no full information about the farmers (borrowers), this makes it difficult to distinguish high-risk borrowers from low-risk ones. Additionally, this makes it difficult for the lenders to discriminate against the risky borrowers by increasing the interest rate and push out the low risks farmers from the credit market. Therefore, adverse selection leads to credit rationing and only a few already well to do farmers are likely to have Access to financial empowerment (Braverman and Guasch, 1986; World Bank, 2000; Zeller, 1994).

Moral hazard refers to the difficulty in monitoring borrowers' actions once they receive the loan from lenders. This problem arises because the lenders are unable to monitor

the actions (unobservable) or efforts taken by borrowers after the loan has been given but before project returns are realized. Furthermore, the lender cannot observe the borrower's profits. Thus, the lenders are not able to know clearly whether farmers (borrowers) made profits or losses and even if they know, they cannot force the borrower (farmer) to repay the loan (Aghion & Morduch, 2004).

III. METHODOLOGY

This study was both qualitative and quantitative in nature and the data collection methods used were questionnaires and interviews. The study employed purposive and stratified sampling techniques to create reliable comparable groups and presentation of the information was done in form of themes, frequency tables and charts. The sample size was 120 respondents drawn from Mumbwa District. They consisted of eight (8) female farmers and two (2) male farmers from each ward of the 11 wards and one (1) from the Banking sector, one (1) from Micro Finance Institutions (MFIs), one (1) from Community Development Office, one (1) from Zambia National Farmers Union (ZNFU), five (5) Camp Extension Officers and one (1) District Agriculture coordinator.

IV. FINDINGS

A. Availability of Agro Financing in Promoting Women Empowerment

Agriculture financing is available but at a very minimal rate and very few women benefit from it. Most of the women don't even know anything about the empowerment program. The purpose of the empowerment programme for women farmers in the district is to increase access to and use of sustainable financial services by poor rural women but from the time of its inception only a few have benefited directly or indirectly from the programme. Table 4.1 below shows respondents' responses.

TABLE 4.1 Agro Financing Empowerment

No. of Farmers Empowered	Frequency	Percent
Empowered	29	20
Not empowered	80	75
Other	2	5
Total	111	100

Source: Field study (2021)

Agro financing empowerment for women is only given to those that own land. According to the findings, very few women own land and it is only those with land that are benefiting from the program. As per table 4.1 above, from the 111 respondents only 29 have been empowered financially so far for the past three years. Women in Mumbwa district are often unaware when government is selling land because the fact is that such adverts are normally published in newspapers only available along the line of rail and in English which many cannot read. Women also do not have the means to purchase. There is also a perception that land ownership is externally driven and is not necessarily a felt need for women.

B. Efforts of Central Government and the Private Sector in Addressing the Challenges of Agriculture Financing in Promoting Rural Women Farmer Empowerment

The findings show that only 31 women farmers were allocated the agriculture financing. Women farmers who were allocated amounts between K250-K3000 represented by 24%, followed by 4 women who did not disclose how much was allocated to them while 80 women farmers represented by 72% did not receive any form of agriculture financing.

The awareness levels of women concerning agriculture financing policies in promoting the rural empowerment programme is low as most of the women farmers do not know anything about it. The agricultural sector plays an important role in the Zambian economy. The share of the agriculture GDP financed by banking sector and other financial services is among the highest in Zambia, but small scale farmers have no knowledge on this. Nearly half of the population is working in agriculture. Yet less than 5 percent of institutional credit goes to small and medium scale farmers especially women.

According to the findings, only 31 women were empowered in the last three years. This is a very small number compared to the number of women living in Mumbwa district. The programme was aimed at training and empowering 36,000 Zambian farmer over a three-year period. The program was to help female farmers to develop business plans and help those leases machinery including tractors and trailers with a value of \$13.5 million over a three-year period. The farmers were then to provide quality farming services such as land preparation, transportation and planting making available mechanised farming methods across the country.

There are a lot of challenges faced when it comes to empowering women some of which include; poor levels of group participation, insufficient funds, poor sales, low return of income, lack of training, lack of resources and land and many more. There are many reasons why poor rural women farmers cannot access the financial services that could improve their lives and livelihoods, and many reasons why financial service providers do not adequately serve this large section of Zambia's population. Lack of knowledge, understanding and financial confidence among poor, rural women consumers combined with the high cost and logistical challenges of serving scattered rural populations exclude many poor women from the financial sector. The relatively poor and dispersed nature of the smallholder farmers and rural households and the volatile nature of rural and agricultural income streams presents considerable challenges for financial service providers. The prohibitively high costs of offering conventional, branch-based services in remote rural areas demands creative thinking and innovation in both products and delivery of those products. Efforts to provide rural financial services have often been unsuccessful, chiefly for reasons of poor product design, development and delivery that fails to meet the needs of this very large market segment.

C. The Extent to which Ministry of Agriculture through Research and Extension Services Impacts Rural Women Farmers

The Ministry of Agriculture through the research and extension services help rural farmers by sustaining their livelihood through empowering them financially and also by training them but in this case agriculture financing for women empowerment is not sustainable because of the poverty levels in the district. This shows that the empowerment program is not helping much. To make matters worse, Mumbwa district has seen a rise in intense floods, drought and other climatic risks that have reduced yields for women farmers putting their lives and livelihoods in in the cross chairs.

V. RECOMMENDATIONS

Arising from the findings, the study recommended that government should come up with deliberate policies that favor women empowerment in the agriculture sector such as micro finance access without collateral requirement. The Ministry of Agriculture in conjunction with the private sector should promote diversified extension messages for all categories of women farmers in relation to agro financing as a tool for rural women empowerment. On the other hand, government in collaboration with other cooperating partners should mobilize resources in order to develop cost-effective, demand-driven research and extension linkages focusing on access to agro finance as a tool for rural women empowerment in Mumbwa District.

REFERENCES

- [1] Abdul-Jalil, M.-A., 2015. Determinants of Access to financial empowerment and Its Impact on Household Food Security in Karaga District of the Northern Region of Ghana. Unpublished PhD thesis.
- [2] Adera, A., 1995. Instituting effective linkages between formal and informal financial sector in Africa. A Proposal. Savings and Development, Volume 1, pp. 5-22.
- [3] Africa: An Assessment of Recent Evidence. International Development Working Paper 145, Michigan State University, East Lansing, MI.
- [4] Ahma, W., 2010. Meeting the financial needs of smallholder farmers in Ethiopia African smallholders. Food Crops, Markets and Policy., Issue 156.
- [5] Akpan NS (2015). Women and rural development in Nigeria: Some critical issues for policy consideration. Social Sciences 2015;4(5):110–8
- [6] Akpan, S. B. et al., 2013. Determinants of Credit Access and Demand among Poultry Farmers in Akwa Ibom State, Nigeria. American Journal of Experimental Agriculture, 3(2), pp. 293-307.
- [7] Akudugu, M. A., 2012. Estimation of the Determinants of Credit Demand by Farmers and Supply by Rural Banks in Ghana s Upper East Region. Asian Journal of Agriculture and Rural Development., 2(2), pp. 189-200.
- [8] Akwaa-Sakyi, E. K., 2013. Impact of microcredit on rural farming activities: The case of farming communities within Sunyani area. Management Science and Engineering, 7(4), p. 23.
- [9] Alene, D. & Manyong, V., 2007. The effects of education on agricultural productivity under traditional and improved technology in Northern Nigeria: An endogenous switching regression analysis. Empirical economics, pp. 32:141-159.
- [10] Aliero, H. M. & Ibrahim, S. S., 2011. An analysis of farmers' access to formal credit in the rural areas of Nigeria. African Journal of Agricultural Research, 6(17).
- [11] Anderson, S. & Baland, J. (2002). The Economics of ROSCAS and Intrahousehold Resource Allocation. The Quarterly Journal of Economics, 117(3), 963:995.
- [12] Anley, Y., Bogale, A. & Haile-Gabriel, A., 2007. Adoption decision and use intensity of soil and water conservation measures by smallholder

- subsistence farmers in Dedo district, western Ethiopia. *Land Degradation and Development*, pp. 18(3):289-302.
- [13] Asfaw, S. A. et al., 2010. Institutions and poverty in Ethiopia; Patancheru. Socioeconomic Assessment of Legume Production, Farmer technology Choice, Market Linkages, ICRISAT,
- [14] Awotide, B., Abdoulaye, T., Alene, A. & Manyong, V., 2015. Impact of Access to financial empowerment on Agricultural Productivity: Evidence from Smallholder Cassava Farmers in Nigeria, Milan, Italy: Agriculture in Interconnected World.
- [15] Awunyo-Vitor, D. & Abankwa, V., 2012. Substitutes or compliments? formal and informal credit demand by maize farmers in Ashanti and BrongAhafo Regions of Ghana. *International Journal of Agriculture and Forestry*, 2(3), pp. 105-112.
- [16] Baffoe, G., Matsudab, H., Masafumi Nagaoc & Akiyamad, T., 2014. The Dynamics of Rural Credit and Its Impacts on Agricultural Productivity: An Empirical Study in Rural Ghana. *International Journal of Sustainable Development*, Issue ISSN 1923-6654.
- [17] Barber, W., 1961. *The Economy of British Central Africa*, London: Oxford University Press.
- [18] Bashir, M. K., Mehmood, Y. & Hassan, S., 2010. Impact of financing agriculture in promoting rural women empowerment on productivity of wheat crop: Evidence from Lahore, Punjab, Pakistan. *Pakistan Journal of Agricultural Sciences*, 47(4), pp. 405-409.
- [19] Bateman, M., 2011. How Lending to the Poor Began, Grew and Almost Destroyed a Generation in India. *Journal of Development and Change*, pp. 43(6):1385-1402.
- [20] Binam, J. N., Toney, J., Nyambi, G., & Akoa, M., 2004. Factors affecting the technical efficiency among smallholder farmers in the slash and burn agriculture zone of Cameroon. *Food policy*, 29(5), 531-545.
- [21] Bing, Z. et al., 2008. Empirical study on the financial repression of rural households' debit and credit and the effects on their welfare in less developed regions of Jiangsu province as an example. *Journal of Modern Accounting & Auditing*, 4(12).
- [22] Caliendo, M. & Kopeinig, S., 2008. Some practical guide for the implementation of propensity score matching. *Journal of Economic Survey*, 22(1), pp. 31-72.
- [23] Calzadill, A. et al., 2009. Economywide Impacts of Climate Change in Sub-Saharan Africa.. Washington, DC: IFPRI Discussion Paper No. 873, : International Food Policy Research Institute.
- [24] Carter, M. R., 1988. Equilibrium credit rationing of small farm agriculture. *Journal of Development Studies*, pp. 28(1); 83-103.
- [25] Chapoto, A., 2010. Agricultural Productivity in Zambia: Has there been any Progress?. 04 January, pp. 2-6.
- [26] CSO, 2016. *Living Conditions Monitoring Survey (Lcms) Report*, Lusaka: Central Statistics Offices.
- [27] del Rio, T., 2014. Farming Systems Characterization in Three Communities from the Barotse Floodplains, Zambia: Relating Landscape with Production and Diversity, Montpellier: CGIAR.
- [28] Demircuc-Kunt, A., Klapper, L., Singer, D., and Van Oudheusden, P. (2015). *The Global Findex Database 2014: Measuring Financial Inclusion around the World*. Policy Research Working Paper 7255, World Bank, Washington, DC.
- [29] Dzadze, P., Osei-Mensah, J. A. R. & Nurah, G. K., 2012. Factors determining access to formal credit in Ghana: A case study of smallholder farmers in the Abura-Asebu Kwamankese district of central region of Ghana. *Journal of Development and Agricultural Economics*, 4(14), pp. 416-423.
- [30] Ekwere, G. E. & Edem, I. D., 2014. Evaluation of Financing agriculture in promoting rural women empowerment Facility in Agricultural Production and Rural Development. *Global Journal of Human-Social Science Research*, 14(3), pp. 1926.
- [31] Enyim, O., Ewno, N. E. & Okoro, T., 2013. Banking sector credit and the performance of the agricultural sector in Nigeria. *European Journal of Scientific Research*, pp. 23(2), 35 – 55.
- [32] FAO, 2018. *National Gender Profile of Agriculture and Rural Livelihoods – Zambia*. Country Gender Assessment Series, Rome: FAO.
- [33] Farnworth, C. R., Akamandisa, V. M. & Hichaambwa, M., 2011. *Zambia Feed the Future Gender Assessment*, Cornwall: Pandla Consulting.
- [34] Faulkender, M. & Yang, J., 2010. Inside the black box: The role and competition of compensation peer groups. *Journal of Financial Economics*, 2(96), pp. 257-270.
- [35] Frederiksen, T., 2010. *Unearthing Rule: Mining, Power and the Political Ecology of Extraction in Colonial Zambia*, Manchester: The University of Manchester.
- [36] Freeman, H., Simeon, K. & Jabar, M., 1998. Credit constraints and smallholder dairy production in the East African highlands: application of a switching regression model. *Agricultural Economics*, pp. 19: 33-44.
- [37] Friedlander, D. & Robins, P. K., 1995. Evaluating program evaluations: Evidence on commonly used non-experimental methods. *American Economic Review*, 85(92), p. 923–937.
- [38] Fuglie, K. & Bosch, D., 1995. Economics and Environmental Implications of soil Nitrogen Testing: A Switching-Regression Analysis. *American Journal of Agricultural Economics*, pp. 77:891-900.
- [39] Gaisina, Sholpan., 2010. Formal credit institutions in agriculture of Kazakhstan (micro-econometric analysis), IAMO Forum 2010, Halle (Saale), June 16 – 18,
- [40] Ganbold, 2008. Improving Access to Finance for SME; International Good Experiences and Lessons from Mongolia. DE – JETRO, p. No. 238 of 2008.
- [41] Gordon & Gordon, 2007. *Understanding Contemporary Africa*. Fourth Edition. Colorado: Lynne Rienner Publishers, Inc.
- [42] Grogan, K., Birch-Thomsen, T. & Lyimo, J., 2013. Transition of Shifting Cultivation and its Impact on People's Livelihoods in the Miombo Woodlands of People's Livelihoods in the Miombo Woodlands of Northern Zambia and South-Western Tanzania. *Human Ecology*, Volume 41, p. 77–92.
- [43] Grosskopf, S., 1993. Efficiency and productivity. In *The Measurement of productive efficiency: Techniques and applications*, edited by H.O. Fried, London: Oxford University Press.
- [44] Group, W. B., 2017. Reaping richer returns from public expenditures in agriculture. *Zambia Economic Brief*, Issue 9.
- [45] Hausman, J., 1983. Specification and estimation of simultaneous equation models in: Griliches Z, Intriligator M (eds) *Handbook of econometrics*. Amsterdam.: North Holland press.
- [46] Hayami, Y. & Ruttan, V., 1985. *Agricultural development: an international perspective*. Baltimore, USA: John Hopkins University Press.
- [47] Hirway Indira (2015), *Development Agenda Post 2015 and Women in Tanuka Endow*, Sumit Mazumdar and Mitu Sengupta (eds) *Human Development in the Global South*, Institute for Human development, New Delhi, pp. 41-58
- [48] https://www.theglobaleconomy.com/Zambia/Agriculture_productivity [Accessed 27 July 2018].
- [49] Hussain, A. H., 2012. Impact of credit disbursement, area under cultivation, fertilizer consumption and water availability on rice production in Pakistan (1988-2010). *Sarhad Journal of Agriculture*, 28(1), pp. 95-101.
- [50] Iqbal, M., Ahmad, M., Abbas, K. & Mustafa, K., 2003. The Impact of Institutional Credit on Agricultural Production in Pakistan. *The Pakistan Development Review*, 42(4), pp. 469-485.
- [51] Jayne T.S., N.M. Mason, W.J. Burke, and J. Ariga. 2016. "Agricultural Input Subsidy Programs in
- [52] Kabeer, Naila (2005) 'Is Microfinance a 'Magic Bullet' for Women's Empowerment? Analysis of Finding from South Asia', *Economic and Political Weekly*, 40 (44/45):4709-4718
- [53] Karlan, D., Kutsoati, E., McMillan, M. & Udry, C., 2011. Crop price indemnified loans for farmers: A pilot experiment in rural Ghana. *The Journal of risk & insurance*, 78(1), p. 37–55.
- [54] Leedy, P. D. & Ormrod, J. E., 2013. *Practical Research: Planning and Design*. 10th ed. Thousand Oaks: Prentice hall.
- [55] Ligon, E. & Sadoulet, E., 2007. Estimating the Effects of Aggregate Agricultural Growth on the Distribution. Background paper for the WDR 2008.
- [56] Lokshin M, Sajaia Z., 2004. Maximum likelihood estimation of endogenous switching regression models. *The Stata J*4(3):282–289.
- [57] Maddala GS, Nelson FD., 1975. Switching regression models with exogenous and endogenous switching. In *Proceeding of the American Statistical Association (Business and Economics Section)*, pp. 423–426
- [58] Mare, R. D. & Winship, C., 1987. Endogenous Switching Regression Models for the Causes and Effects of Discreet Model. CDE working paper, pp. 87-32. Mason, N. M., Jayne, T. S. & Mofya-Mukuka, R., 2013. A Review of Zambia's Agricultural Input Subsidy Programs:

- Targeting, Impacts, and the Way Forward, Lusaka: Indaba Agricultural Policy Research Institute (IAPRI).
- [59] Microcredit Summit Campaign Report (2015), available at: <https://stateofthecampaign.org/read-the-full-2015-report/> (last accessed 4 January 2017)
- [60] Miller, C. J. & Ladman, J., 1983. Factors impeding credit use in small farm households in Bolivia. *The Journal of Development Studies*, 19 (4), p. 523.
- [61] Modigliani, F. & Miller, M. H., 1958. The cost of capital, corporation finance and the theory of investment. *American Economic Review*, Volume 48, p. 261–290.
- [62] Mpuga, P., 2010. Constraints in access to and demand for rural credit: Evidence from Uganda. *African Development Review*, 22(1), pp. 115-148.
- [63] Musaba, E. & Bwacha, I., 2014. Technical Efficiency of Small Scale Maize Production in Masaiti: District, Zambia: A Stochastic Frontier Approach. *Journa of Economics and Sustainable Development*, pp. 104 - 111.
- [64] Musuna, S., & Muchapondwa, E., 2008. Will availing credit incentives to Zimbabwean farmers trigger a maize output response? Working paper no.100, School of Economics, University of Cape Town.
- [65] Mwansa, D., 2017. Gender and Agricultural Development In Zambia, 1890-1990, Lusaka: The University of Zambia.
- [66] Neubert, S. et al., 2011. Agricultural development in a changing climate in Zambia: increasing resilience to climate change and economic shocks in crop production, Bonn: German Development Institute.
- [67] Obamuyi, T., 2007. An Exploratory Study Delinquency among small and Medium enterprises (SMEs) in Ondo State Nigeria. *Labour and Management in Development*, pp. 8;2-8.
- [68] Owusu, S., 2017. Effect of Access to financial empowerment on Agricultural Productivity: Evidence from Cassava Farmers in the Afigya-Kwabre District of Ghana. *International Journal of Innovative Research in Social Sciences & Strategic Management Techniques*, 4(2), pp. 55-67.
- [69] Rakotoarisoa, A. M., Iafate, M. & Paschali, M., 2011. Why has Africa become a Net Food Importer? Explaining Africa Agricultural and Food Trade Deficits. Trade and Markets Division, Food and Agricultural Organization of the United Nations.
- [70] Rakotoarisoa, M., Iafate, M. & Paschali, M., 2011. Why has africa become a net food importer?, Rome: FAO.
- [71] Raney, T. et al., 2011. The State of Food and Agriculture 2010-11: Women in agriculture: Closing the gender gap for development, Rome: FAO.
- [72] Rima, N. S., 2014. Financing agriculture in promoting rural women empowerment flow of Commercial Banks and Impact on Agricultural production in Nepal. *Scholars Journal of Art, Humanities and Social Science*, 2(2), pp. 372-376.
- [73] Rui, L. & Xi, Z., 2010. Econometric analysis of credit constraints of Chinese rural households and welfare. *Journal of Applied Economics*, 201(42), pp. 1615-1625.
- [74] Saleem, M. A. & Jan, F. A., 2011. The impact of financing agriculture in promoting rural women empowerment on agricultural productivity in Dera Ismail Khan (District) Khyber Pakhtonkhawa Pakistan. *European Journal of Business and Management*, 3(2), pp. 38-44.
- [75] Schultz, T., 1964. *Transforming Traditional Agriculture*. New Haven: Yale University Press.
- [76] Sial, M. H., Awan, M. S., & Waqas, M., 2011. Role of institutional credit on agricultural production: A time series analysis of Pakistan. *International Journal of Economics and Finance*, 3(2), 126-132.
- [77] Sjah, T., Cameron, D. & Russell, I., 2003. Factors contributing to the performance of financing agriculture in promoting rural women empowerment in Lombok Indonesia. In 14th International Farm Management Congress: Farming at the edge. s.l., International Farm Management Congress.
- [78] Smith LC, Ramakrishnan U, Ndiaye A, Haddad L, Martorell R. (2003). The importance of women's status for child nutrition in developing countries. IFPRI Research Report 3. Washington, DC: International Food Policy Research Institute.
- [79] Sriram, M. S., 2007. Productivity of Rural Credit: A Review of Issues and Some Recent Literature. *International Journal of Rural Management*, 3(2), pp. 245-268.
- [80] Tenaw, S. & Islam, K., 2009. Rural financial services and effects of microfinance on agricultural productivity and poverty. University of Helsinki.
- [81] The Indaba Agricultural Policy Research Institute (IAPRI). 2016. Rural Agricultural Livelihood Survey (RALS) Report, Lusaka:
- [82] Timmer, C. 2005. Agriculture and Pro-Poor Growth: An Asian Perspective; Center for Global Development, Working Paper No. 63. Washington, DC: Center for Global Development.
- [83] Tucker, W. J., 2011. Selection bias and econometric remedies in accounting and finance research. *Journal of Accounting Literature*.
- [84] United Nations. (2015). *The World's Women 2015: Trends and Statistics*. United Nations, Department of Economic and Social Affairs, Statistics Division. Sales No. E.15.XVII.8
- [85] White, P., Finnegan, G., Eija, P. & Po, P., 2015. Linking Women with Agribusiness in Zambia: Corporate Social Responsibility, Creating shared Value, and Human Rights Approaches, Washington, DC: The World Bank.
- [86] World Bank, 2014. *Levelling the field: Improving opportunities for women farmers in Africa*. Washington, DC: World Bank.
- [87] World Bank, 2017. *The Global Economy*. [Online] Available at: Xinshe Diao, 2010. Economic Importance of Agriculture for Sustainable Development and Poverty Reduction: Findings from a Case Study of Ghana. Paris, IFPRI.
- [88] Yadav, P. & Sharma, A. K., 2015. Financing agriculture in promoting rural women empowerment in Developing Economies: A Review of Relevant Literature. *International Journal of Economics and Finance*, Vol. 7, No. 12; 2015.
- [89] Zuberi, H. A., 1986. Production function, institutional credit and agricultural development in Pakistan. *The Pakistan Development Review*, 28(1), pp. 43-56