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Examining the Effectiveness of Women Empowerment Through Comprehensive Rural Development Programmes: A Case Study of Women Dairy Projects in Keemba Area of Monze

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Abstract

Livestock sector accounts for about 3% to the agriculture's share of the Gross Domestic Product (GDP) in Zambia. The sector provides essential food products such as meat and milk, raw materials such as hides and skins, blood meal and horns and sustains employment and incomes of the rural population in the livestock areas. Through animal draught power and as a source of organic manure, it contributes directly to increased agricultural production in general and food security in particular. Mixed crop and livestock farming is widespread among small–scale farmers in the country. The dairy sub–sector plays a major part in the livestock sector. Production of milk for the market is dominated by smallholders largely due to more farmers joining the dairy co– operatives/farmer groups. It is estimated that smallholder dairy farmers contribute about 50% of the marketed milk (150 million litres), 23% is supplied by large–scale commercial farmers, while the remaining 27% is imported as milk and milk products. The aim of the study is to assessing the effectiveness of women empowerment through comprehensive Rural Development Programmes. This is a case study of women dairy projects in Keemba Area of Monze. Specific objectives include; To identify the effects of women dairy projects in improving livelihoods; To discover types of support offered to dairy women farmers in the projects and, To find out challenges faced by women in dairy projects. The research design appropriate for this research was descriptive design. The target population is a group of objects from which samples are taken for measurement. The research site for the study is Keemba in Monze. The study targeted women in dairy. The sample size is 50 subjects from the projects. These are primarily women in dairy business from the 10 clubs in Keemba. Data collected was put into excel and Statistical Package for Social Sciences (SPSS) application for analysis. The data collected through open ended questions was analyzed using narrative and thematic approach using STATA software. Analyzing using thematic areas allowed the researcher to identify, analyze and report patterns within the data. When respondents were asked to indicate the type of support needed for dairy women farmers in the projects. 32% accounting for about 16 respondents indicated purchasing their products and services. 30% accounting for 15 respondents stressed educating them on how best to market their products while those who indicated provision of

access to funds such as CDF accounted for 38% being represented by 19 respondents and were the majority. With regard to challenges faced by women in dairy products, the study shows that 32% of the respondents indicated lack of loans. 24% indicated high rate of interest, while 14% reported marketing of dairy products. Meanwhile, 20% accounted for those respondents who claimed unavailability of skilled labour while 10% reported lack of knowledge about vaccination. Recommendations include involving both women and men appropriately in consultation, design and monitoring processes is crucial.

Keywords: Dairy: A building or room for the processing, storage, and distribution of milk and milk products.Farmer: A person who owns or manages a farm
Livelihoods: (The way someone earns) the money people need to pay for food, a place to live, clothing, etc
CDF: community development fund

Introduction

1.1 Background

The livestock sector accounts for about 3% to the agriculture's share of the Gross Domestic Product (GDP) in Zambia. The sector provides essential food products such as meat and milk, raw materials such as hides and skins, blood meal and horns and sustains employment and incomes of the rural population in the livestock areas. Through animal draught power and as a source of organic manure, it contributes directly to increased agricultural production in general and food security in particular. Mixed crop and livestock farming is widespread among small–scale farmers in the country. The dairy sub–sector plays a major part in the livestock sector. Production of milk for the market is dominated by smallholders largely due to more farmers joining the dairy co– operatives/farmer groups. It is estimated that smallholder dairy farmers contribute about 50% of the marketed milk (150 million litres), 23% is supplied by large–scale commercial farmers, while the remaining 27% is imported as milk and milk products.

Dairy co–operatives provide readily available market for milk from producers. In some areas of the country, notably Southern Province, milk collection centres or sheds are located about 8–30 km radius from small–scale dairy farmers and the major milk processors are located 60–160 km from the collection centres. The distance of milk collection center limits the participation of potential farmers. There is therefore a need to establish more milk collection centres to reduce on the distance. The per capita consumption of milk in the country is 16 litres while the World Health Organization (WHO) recommended per capita consumption is 45 litres. Therefore, according to the Department of Veterinary Services and Livestock Development, Zambia needs to produce about 900 million litres per year to meet the demand for milk and other dairy products (like cheese, butter, yoghurt, etc.) for a national population size of around 10 million people. Thus, there is significant scope for increased milk production. Challenges to smallholder dairy production and livestock production in general include: high risk of cattle diseases, lack of constant supply of high quality and reasonably priced inputs like feed, lack of easily accessible milk bulking points, limited supply of well-organized and reasonably priced source of grade stock, inadequate dairy training, extension and vet services, and poorly organized farmer groups. Therefore, there is a need for increased investment in the dairy sub–sector by the private and public sector and with support of the co–operating partners.

From mainly purchasing initially from large commercial dairy farms, large commercial processors in Zambia are now beginning to buy more from smallholder producers. This shift has been made possible by the creation of milk collection centres (MCCs). Smallholder dairy farmers have transferred from traditional direct sales to local consumers to using the newly constructed MCCs. These centres have also attracted many new entrants into smallholder dairy production. Most MCC milk is sold on to the modern sector (large second-stage processors), and then partly sold on to the modern retail sector (which only sources from the modern sector processors). Hence, MCCs serve as a key initial link in the modern channel of the dairy value chain. This channel provides greater quality control in sourcing milk at the start of the chain, which is an important factor for the efficiency of modern dairy processors

The Government of Zambia and the Food and Agriculture Organization of the United Nations (FAO) share the common belief that gender equality and women's empowerment are central to achieving food and nutrition security, rural poverty reduction and sustainable development for all. However, evidence confirms that cultural and socio-economic matters continue to pose challenges towards women's full contributions and benefits from the agricultural growth and transformation. This can be ascribed to high levels of poverty among rural female-headed households, limited availability of sex disaggregated data to inform sound policies and programmes in the agricultural sector and limited knowledge and skills of staff to mainstream gender. It is with this background that FAO commissioned a Country Gender Assessment (CGA) of the agricultural and rural sectors in Zambia as an important step towards the implementation of its Policy on gender equality adopted in 2022. Many factors influence milk yield levels in dairy cows e.g. nutrition, breed, health status, management and environment. Indigenous breeds that traditionally have been kept in sub Saharan Africa, can cope well with the climate but does not give a high milk yield (Petersen et al., 2003; Grimaud et al., 2007; Hatungumukama et al., 2007; Kugonza et al., 2011). The common indigenous breeds used in Zambia are Angoni, Barotse and Tonga (FAO & IAEA, 2015), yielding up to 5.3 liter/day (Mwenya, 2015). Crossing exotic breed with indigenous gives higher milk yield (Galukande, 2010) but both indigenous breeds and crosses demand sufficient management and feeding. The climate in Zambia influences access to on-farm produced feed, water and pasture. The year is divided into three seasons; May to August is dry and relatively cold, September to November is characterized by dry and hot weather. The last season, December – April, is rainy and warm and can last up to six months per year (Utrikespolitiska institutet, 2011). This makes the climate dry for up to six months which means a lack of green pasture for livestock.

Various studies have provided anecdotal evidence of the impact of this food system modernization process on smallholder farmers in Zambia. See, for example, Emongor et al. (2014) for the impact of the rise in supermarkets on Zambia's fresh produce markets, or Onumah (2020) for the direct and indirect effects on smallholder producers of warehouse receipt systems in grain markets. In Zambia's dairy value chain, studies of a mostly qualitative nature have found that, although emerging smallholder dairy farming based on grazing and MCCs is competitive, it is still operating below potential even though it is growing fast (Swanson and Land O'Lakes, 2019; ACF, 2021; World Bank, 2011; Mumba et al., 2012). Nevertheless, there have been no articles on Zambia that address the above research questions with primary farm-level data. The present paper aims to contribute to the Zambian debate.

1.2 Statement of the problem

Female farmers are less likely to succeed when compared to their male counterparts; this problem is often due to a number of setbacks that range from a lack of same access to seeds, credit, extension services and technology. Unfortunately, they are also less likely to own land as statistics show that only

20 percent of landowners globally are women. Also if they hope to inherit family property, the law may deprive them of an equal share, or social norms and traditions may simply favour their male relatives (UN Women, 2016). The major problem affecting agricultural development in most rural areas of sub-Saharan Africa (SSA) has been identified as the lack of infrastructure; all attempts to develop agriculture would be useless if this problem is not solved. A large number of farmers in this region operate at the subsistence and smallholder level, with average holding of about 1.0-3.0 hectares, and sadly, a disproportionate share of the agricultural production is left in their hands (Mania, 2020). The informal milk market is estimated at 50–60 percent of total marketed production in Zambia. It basically consists of farmers selling raw milk either directly or through so-called "scoopers" at small retail outlets to consumers in rural areas Given the high perishability of raw milk and lack of small-scale milk processing (pasteurization), supply chains in Zambia's informal market are short both in terms of geographic reach and number of intermediaries. Increasingly, however, traditional smallholders are selling their milk to MCCs. In the formal milk market, the processors are the channel leaders and are supplied mainly by commercial dairy farms (Valeta, 2017).

1.3 General objective

The aim of the study is to assessing the effectiveness of women empowerment through comprehensive Rural Development Programmes. This is a case study of women dairy projects in Keemba Area of Monze.

Specific objectives include the following:

To examine the effects of women dairy projects in improving livelihoods,

To establish types of support offered to dairy women farmers in the projects,

To ascertain out challenges faced by women in dairy projects.

1.4 Theoretical framework

Theory of the Dairy Industry Modernization

The reality is that nowadays technological modernisation of dairy industry is dealing mostly with the problems of rehabilitation of traditional livestock houses and new construction. But the construction of the large livestock object which has both economic advantages and social disadvantages is more preferable. The problems of modernisation of breeder and milking stock on the basis of mostly imported and own reproduction of young breeder of cattle is questionable. What about the problems of milk processing, implementation and price formation, they are almost not subjected to modernisation, which nullify the effectiveness of technological modernisation of the field. Weak motivation in the dairy industry is the result of inability of economic factors, their helplessness in the conditions of little credit availability, insufficient governmental help, low production effectiveness, which, undoubtedly, promises no good prospects for the development of this branch. According to the State programme of agriculture development and market regulation of agricultural products, raw materials and food for 2013-2020, where modernisation is paid a lot of attention, the measures of technical re-equipping are pointed out into special sub-programme "Technical and technological modernisation, innovative development" - for these goals 23.7 billion rubles are granted for the period of the Programme. Nowadays 30.9 million tons of milk per year is produced in the rural facilities. These figures which can be compared to the volume of annual production of milk in such states as China (37.8 million tons), Germany (30.5 million tons) and Brazil (32.3 million tons), speak for the fact that Russia has all the opportunities for becoming one of the world leading producers of dairy products. There appears the necessity of provision of growing demand for milk and milk products by means of development of dairy industry.

LITERATURE REVIEW

This Chapter explains what Literature Review is and its importance in the research process. The chapter also brings to the fore the themes that that were covered in the review. The chapter logically and critically analyzed literature written by others in the subject under review as To identify the effects of women dairy projects in improving livelihoods, To discover types of support offered to dairy women farmers in the projects, To find out challenges faced by women in dairy projects.

2.1 Identifying the effects of women dairy projects in improving livelihoods

Dairying is one of the important enterprises, which supports the rural households by providing gainful employment and steady income. The importance of milk and milk products for the physical development and well-being of human beings is universally recognized. In India, women involvement in livestock management is a longstanding tradition and dairy farming has been an integral part of homestead farming system. Dairy farming is closely integrated with family life, farm women play crucial role in livestock rearing but their contribution in livestock rearing has not been given due place as they always remain invisible workers. Women are generally responsible for the feeding, grazing, fodder collection, milking, processing, dung management, while men who manage the finances generally sale of milk and milk products (Sethi, 2010). They are actively participating in various dairy farming practices including harvesting and bringing of fodder from field, care of sick animal, feed preparation, feeding the animal, cleaning of animal shed, milking, cow dung collection and cake making, etc. (Farinde and Ajayi, 2005, Narmatha et al. 2009).

A study conducted by FAO on gender equity in 2013 indicates that Women makes major contributions to crop production. They provide up to 90% of the labour used in rice cultivation in Southeast Asia. In sub-Saharan Africa, they produce up to 80% of basic foodstuffs for both the household and sale. In home gardens, rural women grow vegetables that are important to household nutrition. Women's roles in crop production are expanding: the outmigration of young men from rural areas in some regions has led to permanent changes in women's responsibilities and tasks. Yet women have the least access to the means for increasing output and yields, and for moving from subsistence farming to higher-value, market-oriented production. Less than 10% of women farmers in India, Nepal and Thailand own land. Only 15% of the world's agricultural extension agents are women.

Another study conducted by Ferguson in Malawi and India in 2013 indicates that smallholder farmers currently produce 90 percent of food in Africa and around half of all food worldwide. Across the developing world, women account for 60 to 80 per cent of these farmers.

2.2 Types of support offered to dairy women farmers in the projects

Most of the farmers do not practice large scale farming and they have been keeping livestock for more than three years (Heyzer, N. 1992). The farmers carry out most of the activities in their farms and they do not depend on hired labour. The farmers have small families excluding dependents and they have learned up to the secondary level of education. Most of the key informants were designated as members and majority of them were in the CSOs e. g. NGO, FBO and the CBO and the civil servants sector. These results plus those of key informants above implied that the availability of microfinance played a very big role in improving the life of the people.

Women's empowerment is crucial for socioeconomic growth in any country since it improves decision-making, income management, understanding of personal rights and independence, family position, and overall rural women's confidence in their talents. Keller and Mbwewe (1991) stated Empowerment is a process in which women learn to organise themselves in order to strengthen their own self-reliance, es-

tablish their autonomous right to make decisions, and control resources, all of which help them challenge and eliminate their own subordination, Self-sufficiency, autonomy, and resource control. Dairy farming is an important source of income for the country's small and marginal farmers especially to women. Milk production is carried out by around 70 million rural families. Small and marginal farmers, as well as landless farmers who supplement their income with dairying, account for a major share of this total. Dairying is primarily done by women in India, who supply the majority of the labour in dairying and animal husbandry. This labour is estimated to be 93 percent in one study. (Sen and Rani, 1990). Some scholars argue about the hidden costs of dairying in form of increased workload of women (Sharma and Vanjani 1993). Dairying provides them additional source of livelihood and is a source of stable income, which ideally should empower them.

Dairying has become a main source of income for families who do not own land and are reliant on labour activities for their livelihood. Dairying is also seen as a responsibility and an opportunity for women. It has been noted that women are self-sufficient when it comes to making day-to-day decisions about dairying. Women also leave the house to speak with others about various dairy-related topics. Dairy money is utilised to meet household requirements, with a portion of it going toward children's education and health care. Although it is crucial to emphasise that the decision to use dairy income does not fall completely on the shoulders of women, the study reveals that women and male family members jointly make the decision Smallholder dairy production is important in supporting rural livelihoods. Dairying generates income and contributes to food and nutrition security (Chand et al., 2015). Nongovernmental organizations (NGOs) and other development partners consider smallholder dairying as a tool to enhance livelihood of rural poor households and as a tool in climate change adaptation and resilience (Chagunda et al., 2016).

The Scaling-up Nutrition (SUN)1 Movement is calling for high-level international attention to scale-up nutrition programmes by 2015. The movement was launched in 2010 with the support of multiple partners, including governments of countries with a high burden of malnutrition, United Nations (UN) agencies, donors, non-governmental organizations, academia and the private sector, together with advocacy initiatives such as the 1000 Days partnership. UN partners such as FAO, UNICEF, World Food Programme (WFP) and WHO collaborating in the Renewed Efforts Against Child Hunger initiative (REACH)2 and the UN Standing Committee on Nutrition (UNSCN) are committed to strengthening governance for nutrition and to revitalizing the role of nutrition at the international level.

2.3 Challenges faced by women in dairy projects

In many developing countries, dairy development is constrained by refrigeration, marketing, processing, transportation, nutritional and husbandry issues. In addition, small-scale dairy producers lack the skills to manage their farms as enterprises; have poor access to services such as health, breeding, training and credit; have little or no capital for investment; and are thwarted by small herd/flock sizes, low milk yields and poor milk quality.

Kalusopa's study on Zambia (2006) stresses that those agricultural producers without information remain at the mercy of the global market giants due to their competitive disadvantage. Farmers will remain dependent excessively on the middlemen, making it difficult for them to adapt to ever-changing market and environmental conditions and to get better profits from their yields. Poor information flows within and between government institutions lead to inefficient institutions, poor policies, poor service delivery and the inability to meet the needs of vulnerable and poor communities (Cecchine and Scott, 2003). Information can support livelihoods through its dissemination on better use of resources, markets, com

modity prices, income generation projects and support services (Venkalesh, et al, 2002).

The most glaring of these obstacles is the gender inequality faced by women in all spheres of life. Systemic gender biases may exist in the form of (a) customs, beliefs and attitudes that confine women mostly to the domestic sphere, (b) women's economic and domestic workloads that impose severe time burdens on them and (c) laws and customs that impede women's access to credit, production inputs, employment, education, or medical care (Baba et al., 2015). Several factors weigh against African women in their efforts to participate in agriculture and maximally benefit from the contributions they put in the sector. These factors limiting their endeavours include but are not limited to socio-cultural and economic problems that they face at home and in the society. Most of these obstacles are so deeply rooted in societal norms that it becomes overwhelming for these women to overcome. Overall, women contribute immensely to agricultural output but unfortunately they hardly, until recently, benefited from agricultural incentives and innovation due to economic suppression, social and traditional practices which weaken the constitutional provisions on gender equality. Gender discrimination, rather than ignorance, is the justification for the lack of female participation in agricultural programmes and projects (Ogunlela and Mukhtar, 2009).

METHODOLOGY

This chapter presented the methodology employed in conducting the research, detailing various subheadings: research design, target population, sample size, sampling procedures, data collection instruments, data collection procedures, data analysis, and ethical considerations.

3.1 Research design

The research design appropriate for this research was descriptive design. According to (Lans & Van der Voordt 2002), one of the characteristics of descriptive research is that it is a factual registration and is no quest for an explanation why reality shows itself in a particular way. Descriptive research investigates conditions, practices, differences or relations, structures, opinions held, and trends that are evident.

3.2 Target population

The target population is a group of objects from which samples are taken for measurement. The research site for the study is Keemba ward in Monze district, zambia. The study targeted women in dairy.

3.3 Sample size

The sample size is 50 subjects from the projects. These are primarily women in dairy business from the 10 clubs in Keemba and the research used the random sampling technique. This sample size was deemed adequate for ensuring the reliability and validity of the findings, as it allowed for meaningful statistical analysis while also capturing diverse perspectives (Creswell, 2014).

Description	Number of respondents
Keemba A	10
Keemba B	10
Keemba C	10
Keemba D	20

Figure showing sample pool

3.4 Sampling Procedure

Sampling, defined as a method of obtaining representative data from a population (Lisa, 2008), and in

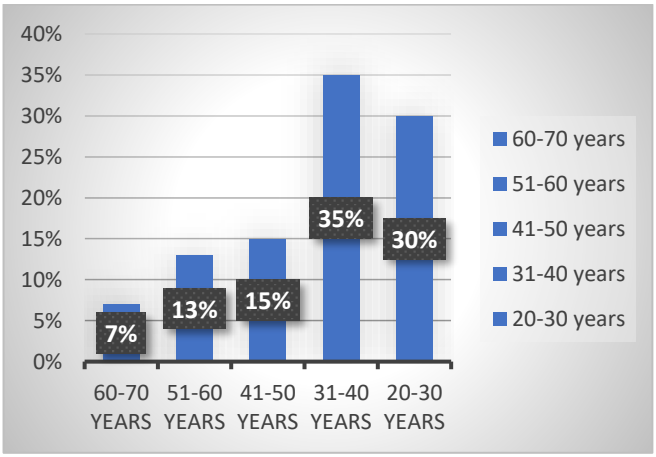
volved randomly selecting farmers to reduce selection bias, while finance officers and agro-economists were purposefully selected to ensure the inclusion of individuals with specific expertise and experience. This combination of random and purposeful sampling contributed to a richer dataset and more nuanced analysis (Palinkas et al., 2015).

3.5 Data collection Procedure

Prior to data collection, the researcher sought permission from participants and relevant authorities to ensure ethical compliance. This step was critical for maintaining transparency and respect for participant rights (Sanjari et al., 2014). The data collection process included structured interviews, questionnaires, and focus group discussions, enabling the researcher to gather both quantitative and qualitative data effectively.

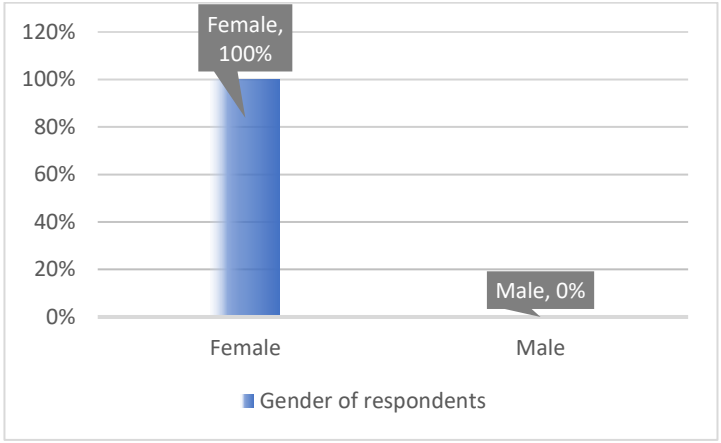
FINDINGS/RESULTS

Fig 4.1 Age



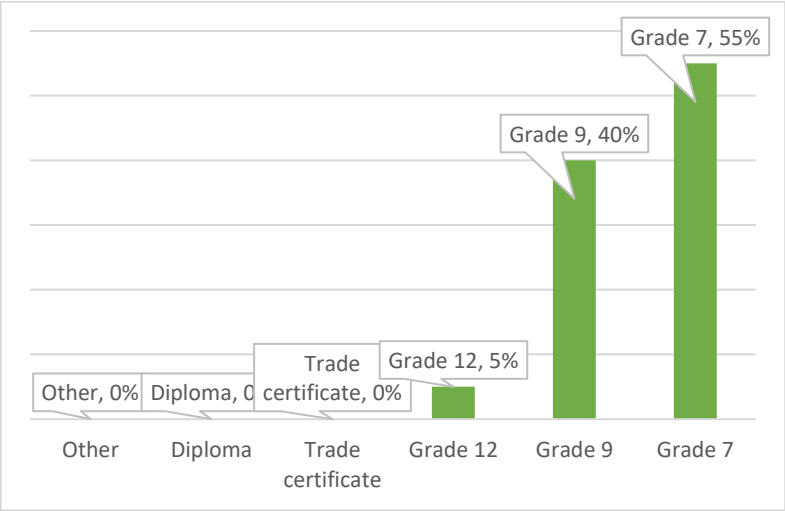
The graph above presents different ages for all the respondents that took part in the study, the respondents were from different cooperatives in Keemba. 35% were from 31 to 40, 30% from 20 to 30, 13% from 51 to 60 and 7% from 60 to 70

Fig 4.2 Gender



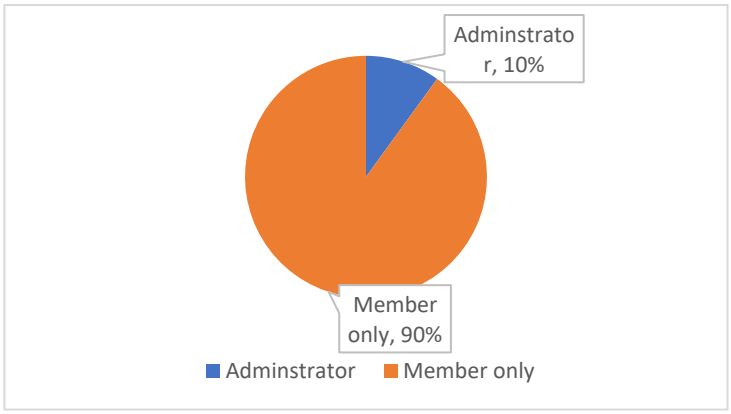
The figure above present a well distribution of sex of respondents. According to the results given above, 100% of the participants were female.

Fig 4.3 Education



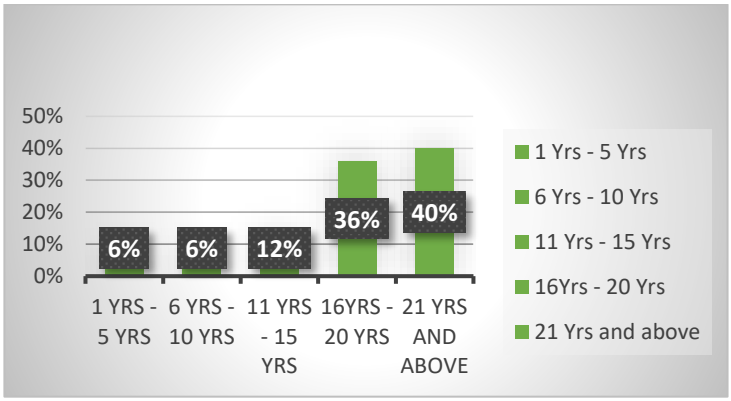
The above figure presents different answers that were given by the participants after the question, "what is your level of education?" the answers given in the graph presents Grade 12 at 5%.

Fig 4.4 Your current position in the cooperative



According to the results presentation in the graph, 90% of the respondents were general members whilst 10% were in cooperative administration.

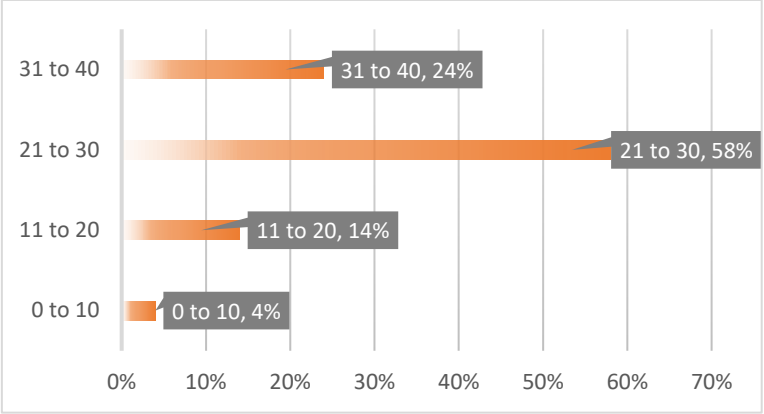
Fig 4.5 Years as a farmer



The above figure presents different years that respondents have spent in farming. Therefore the 1-5 Years is the lowest score, representing 6% of the entire population whereas 6-10 Years was represented with a percentage of 21%, In addition to this, respondents that have spent 11-15 Years. occupied 9% of

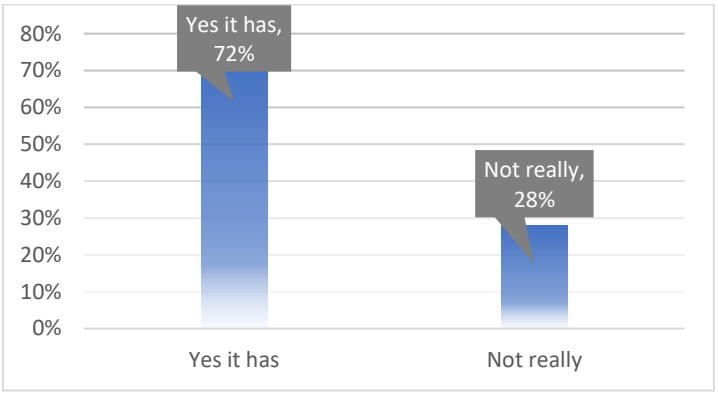
the population, whereas respondents who had worked as farmers between 16-20Years occupied 18% and lastly respondents that had worked more than 21 Years occupied 46% of all the respondents that managed to attempt to the question.

Fig 4.6 How many heifers do you own as a cooperative



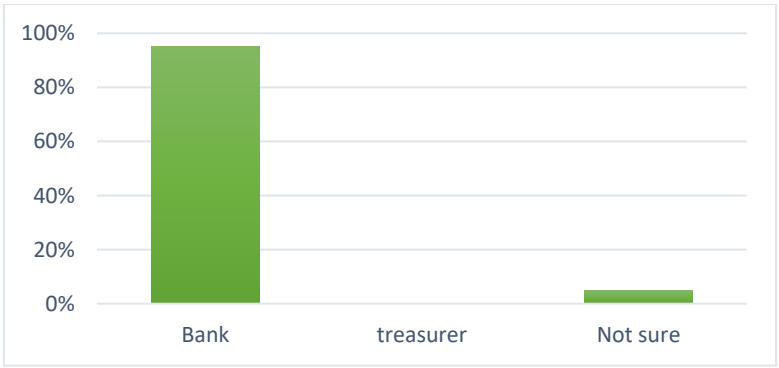
In line with the answers provided by the respondents, 4% had 0 to 10 heifers, 14% had 11 to 20, 58% had 21 to 30% and 24% had 32 to 40

Fig 4.7 Has dairy farming improved savings as a cooperative



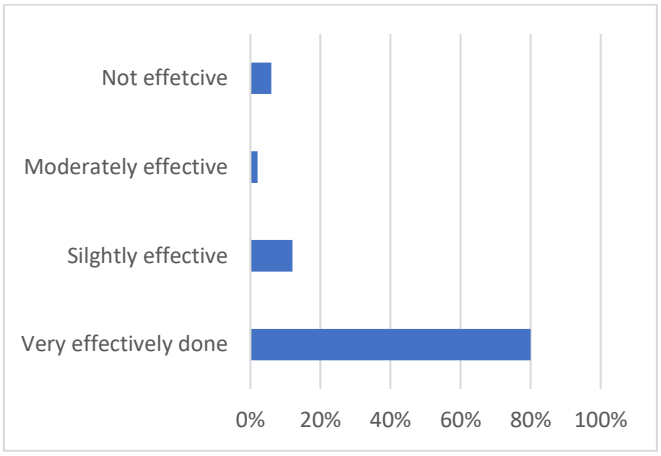
When asked if dairy farming has improved savings as a cooperative, the results presented in the above graph, 72% of the respondents said yes whilst 28% said not really.

Fig 4.8 where are savings kept



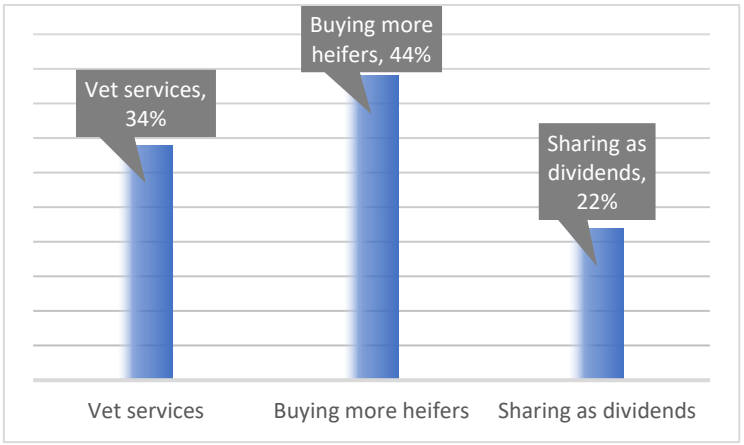
The figure above presents responses on where are savings kept 95% said in banks, 5% said where not sure

Fig 4.9 Effectiveness in the planning of funds generated in milk sales



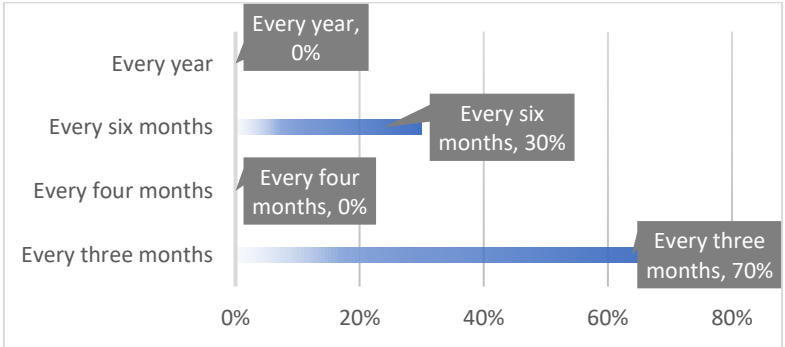
The graph above presents answers that were given after the question "Effectiveness in the planning of funds generated in milk sales?" In line with the results presented, 80% said very effective process,12 % said slightly effective 2% said moderate and 6% said not effective.

Figure 4.10 Utilisation of money from milk sales



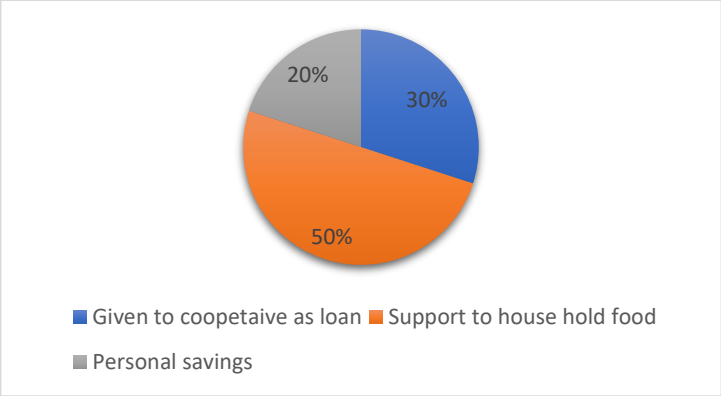
The graph above provides responses on the utilisation of money from milk sales. The highest score was 44% said they buy heifers, 34% said its used for veterinary services 22% said its shared as dividends.

Fig 4.11 How often do you get shares in dividends



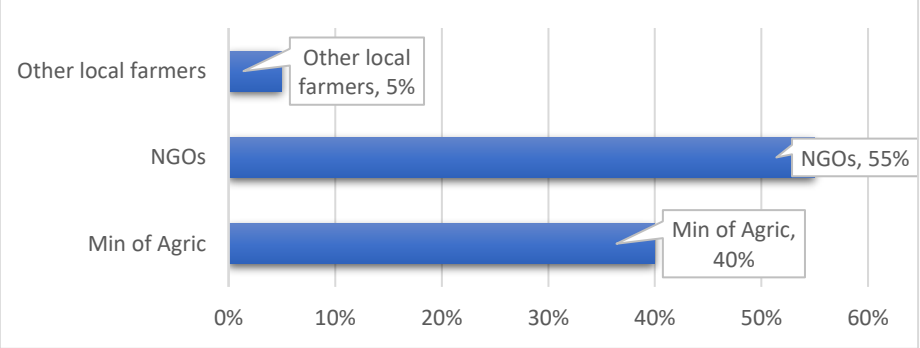
The above figure presents answers given by the respondent after the question "How often do you get dividends" According to the results presented, 70% of the respondents said every 3 months, 0% for every four months, 30% for every 6 months and 0% for once in a year.

Fig 4.12 How have dividends helped in improving livelihoods



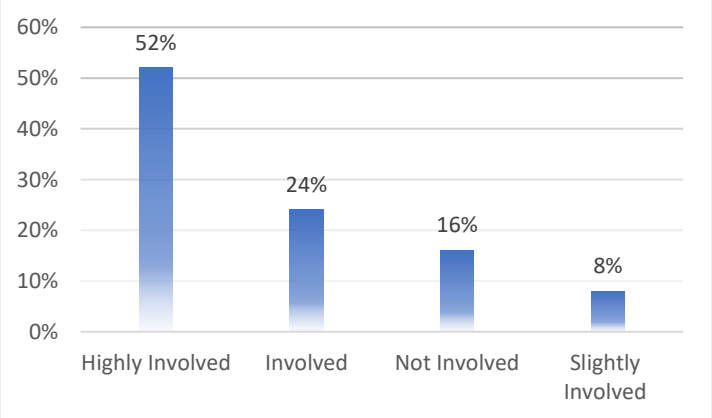
The question requesed the respondents how have dividends helped in improving livelihoods 50% it helped in supporting family food, 20% said it enabled personal savings and 30% said it was given back to the cooperative as loan to generate interest.

Fig 4.13 Who are stakeholders in dairy farming



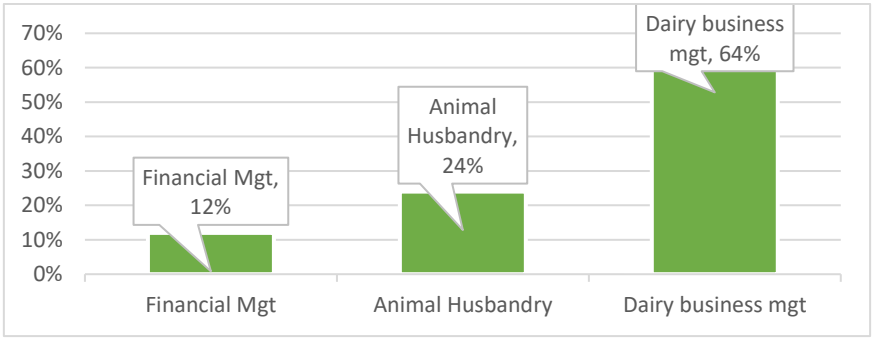
The graph above presents results of the answers that were given by respondents after the question "Who are stakeholders in dairy farming?" In line with the results provided, 55% of the respondents said NGOs, 40% of the respondents said the ministry of agriculture and 5% said other local farmers in the area.

Fig 4.14 Involvement in joint ventures



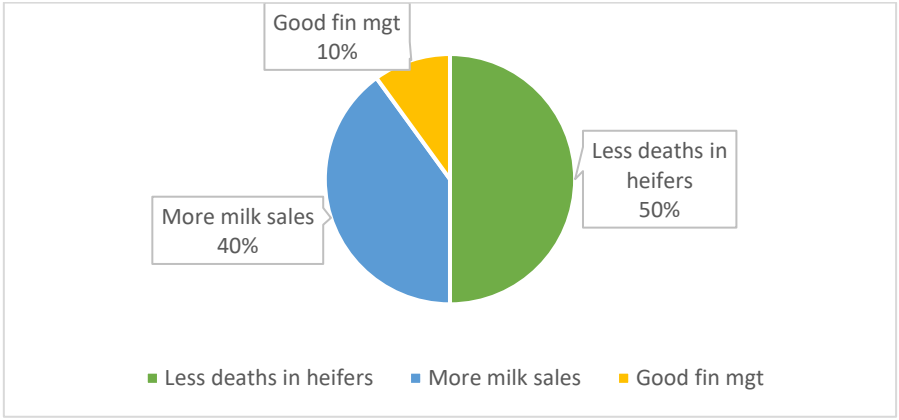
In line with the results presented in the graph above, 52% of the respondents were “highly Involved”, 24% of the respondents were “Involved 16% of respondents were “not Involved” and lastly 8% of the respondents were “Slightly Involved” as this also served as the lowest score from the total.

Fig 4.15 Types of support given to cooperative



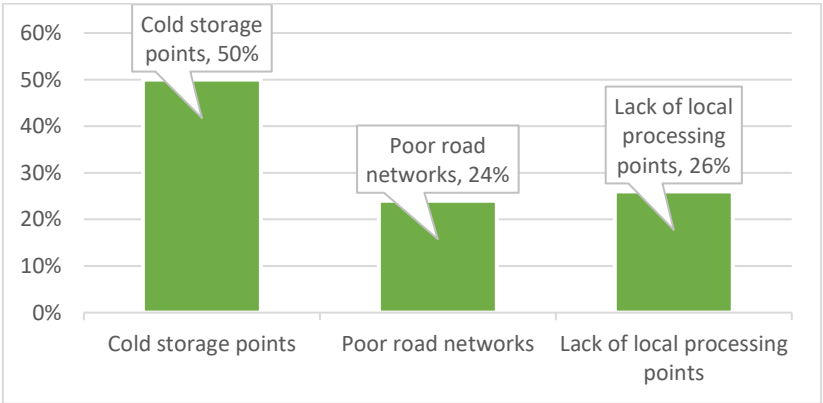
The graph above presents results of the answers that were given by respondents after the question “Types of support given to cooperative?” In line with the results provided, 64% of the respondents said dairy business management, 24 % of the respondents said animal husbandry and 12% said financial management.

Fig 4.16 Effects of support



The above graph presents effects of support by the respondents 50 % less deaths on Heifers. Whereas 40% said it increased milk and 10% of the respondents said it increased financial management.

Fig 4.17



The graph above provides challenges faced by women led cooperatives in dairy projects above.50% said lack of cold storage points, 24% said poor road systems and 26% said lack of locally owned processing points.

5.0 Discussion

Challenges faced by women led cooperatives in dairy projects lack cold storage points. Milk processing and marketing on the other hand is limited by several factors. Primary marketing faces infrastructure bottlenecks caused by poor road networks and lack of appropriate cooling and storage facilities. The poor road infrastructure in the small-scale production areas affects the transport of milk from farms to the collection centres, and subsequently from the collection centres to the processors. The lack of electricity in most areas has limited the establishment of cooling plants. As a result, particularly during the flush period of March to June, there is surplus milk that cannot be absorbed in the domestic market. Over the last few years, the cost of electricity has been rising with the increase in fuel prices. This increase is likely to impact on the processors' cost of production and hence the consumer price for processed dairy products. On the other hand, majority of the processors operate below capacity, and they face competition from a fluid, cash-based informal market. Seasonal fluctuations in quantity of milk delivered and farm gate prices do also affect the profit margins.

CONCLUSION

Women are structurally disadvantaged at the various stages of the dairy value chain. Although positive stories are emerging, more efforts are needed. Yet this is not a women's struggle alone; involving men in consultation processes and implementation is crucial. To be efficient, any intervention affecting food value chains should look at the link between more productive and efficient value chains, and gender equality. These two aspects are traditionally dealt with in silos. The following example of the Zambian dairy value chains shows well how to better link the aforementioned dimensions. Milk consumption in Zambia has increased considerably in recent years. This has led to new employment and income generating business opportunities along the dairy value chain. This process, also known as dairy intensification, involves new practices such as the introduction of high-yielding cows, complementary feed production and feeding strategies, such as improved fodder and better disease control. These practices require appropriate access to finance, complex technical knowledge, and better extension and veterinary services.

RECOMMENDATIONS

Based on the findings, the following recommendations were made:

Ministry of Agriculture to invest heavily in women led dairy projects

From the government perspective, women contribution to agricultural production should be understood based on their contribution to food security in household and community rather than their contribution to commercialized agriculture which is dominated by men. The Rural areas of Zambian have many geographically dispersed smallholder women farmers that are not integrated into key agriculture value chains. Dispersion increases production costs and reduces small farmer's competitiveness. Therefore, support to women's organisations in the rural areas should be made a priority and government through the ministry of Agriculture should invest heavily in such organisations and movements to support the women from their subordination role in agricultural production

Government to partner with civil society organization to offer civic education

The government Zambian should partner with the civil society organization to offer civic education to community members regarding the legal rights of women. Lastly, financial institutions are very important in increasing dairy productivity in Agriculture by rural women. The ministry of agriculture should create a special program that will encourage existing female dairy farmers and target potential female farmers to invest in the agriculture sector by supporting them financially.

Improved Infrastructure and Transportation (IIT): Improving rural infrastructure, particularly roads and transportation networks, was recommended to enhance market access for farmers. Better infrastructure would reduce transportation costs, minimize post-harvest losses, and increase the efficiency of moving produce from farms to markets (Kamanga et al., 2020).

Access to Dairy Insurance (DI): It was suggested that the government and private sector promote dairy insurance products to protect cooperatives against risks such as animal diseases.

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