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**Agricultural Cooperatives as a Tool to
Support Women's Empowerment: Evidence from
Western and Central Zambia**

MASTER'S THESIS

Prague 2024

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Declaration

I hereby declare that I have done this thesis entitled “Agricultural Cooperatives as a Tool to Support Women’s Empowerment: Evidence from Western and Central Zambia” independently, all texts in this thesis are original, and all the sources have been quoted and acknowledged using complete references and according to the Citation rules of the FTA.

In Prague, 29th April 2024

.....

Klára Kalinová

Acknowledgments

Continuous work on this thesis and a coincidental course of events, involving a major personal crisis, contributed to a shift in my perspective on women's standing in society. I grew up in a quite conservative environment, around people I love, who brought a lot of good in my life, but the environment was also burdened with unhealthy gender norms and rigid rules. I chose this thesis topic four years back, not much aware of that.

Within more than 3 years when I was working on my thesis, a lot changed for me, women's empowerment and gender equality also became my topic of interest, and my originally adopted setting went through a major revision.

I would like to thank Kateřina Stehlíková, a professional who stood by me throughout the recent worst moments in my life.

Thanks to my always understanding kind supervisor, Jana Mazancová, who guided me throughout my work and mentored me. Without her support, my studies might have been terminated, or I could have given up. Thank you for fighting for your students! Thank you for fighting for women.

Also, I want to thank Gospel Iyioku, an incredibly patient data analyst, with immense knowledge to share. Always busy, but always willing to give a helping hand.

Of course, great thanks belong to the closest team, my family - my mum Lada, Aleš, Kristýnka, and Vojta, to the person who taught me how to chill and made (almost) every day of the past year a little brighter for me, Míša.

The greatest thanks go to the almighty God who made all this possible.

Abstract

Agricultural cooperatives have gained increasing attention in strategies aiming at enhancing sustainable rural development and improving life conditions of smallholder farmers, for their ability to bring economic, social, and environmental benefits. Cooperatives have also been employed as potential tools for enhancing women's empowerment and tackling gender inequality. Our study contributes to the evidence.

This paper employs data collected within the final evaluation of a development project intervention implemented by a Czech NGO in the Western and Central Provinces of Zambia in 2021. Quantitative data were obtained from 319 female cooperative members through structured questionnaires. From the total number of respondents, 172 were members of cooperatives involved in the project intervention, and 147 members of control (non-project) cooperatives. To facilitate the interpretation of the results, we used qualitative data from focus group discussions with members of 9 project cooperatives.

Employing the results of the Women's Empowerment Index, we compared the degree of empowerment perceived by female members from 22 project-supported and 21 control group cooperatives. More positive results were found in cooperatives supported by the intervention, suggesting that external support and guidance of small-holder cooperatives contribute to perceptions of increased women's empowerment.

We also explored the determinants of the intensity of women's participation in cooperatives. In this part of the research, we treated all 319 female cooperative members as one group. Using multiple linear regression, a positive relationship with active participation is discovered in two measures of women's agency: women's full control of their income, and their opportunity to freely participate in cooperative activities. The third factor found to be slightly significantly correlated with the participation intensity is the perception of the adequacy of extension support provided to the cooperatives.

We conclude that cooperatives can become actors on the way to support women's empowerment and tackle gender inequality if they function as best as possible according to cooperative principles, surrounded by a supportive institutional environment, with simultaneous attention paid to the existence of discriminatory socio-cultural norms, and efforts made to address them.

Key words: Women's empowerment, Gender equality, Agriculture, Cooperatives, Western Zambia, Small-scale farming

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List of the abbreviations used in the thesis

UN – United Nations

SDGs – Sustainable Development Goals

ILO – International Labour Organization

FAO – Food and Agricultural Organization of the UN

UNICEF – United Nations International Children's Emergency Fund

WB – The World Bank

UN WOMEN – United Nations Entity for Gender Equality and the Empowerment of
Women

GBV – Gender-based violence

NGP – National Gender Policy

NGO – Non-governmental organization

WEAI – Women's Empowerment in Agriculture Index

OPHI – Oxford Poverty and Human Development Initiative

IFPRI – International Food Policy Research Institute

UN ECA – United Nations Economic Commission for Africa

ICA – International Cooperative Alliance

UNDP – United Nations Development Programme

UN OSAGI – UN Office of the Special Advisor on Gender Issues and Advancement of
Women

FGD – Focus group discussion

ZMW – Zambian Kwacha (currency)

ZCF – Zambian Cooperative Federation

IMF – International Monetary Fund

EU – European Union

1. Introduction

Gender equality today is a fundamental human right. Nevertheless, the female half of humanity still faces unequal treatment, is perceived as of lower value, as subordinate, and even ascribed the status of a minor (Veeran 2000). Women encounter uneven economic opportunities, face significant constraints in access to leadership positions, to political participation, are being judged based on discriminatory laws, or suffer from gender-based violence. In its various forms, the issue is present everywhere in the world. What differs, is the extent of encountered problems, the severity of their impact, and the degree of efforts made to tackle them.

In the fast-developing modern world, gender inequality has become an even more burning topic. As the motto of the 1995 Human Development Report (UNDP 1995:1) expressed: *“Human development if not engendered, is endangered.”* In 2015, all Member States of the United Nations embraced the *“2030 Agenda for Sustainable Development,”* with a central focus on 17 Sustainable Development Goals, all of them to be fulfilled by 2030 (United Nations 2015). Along with ending poverty, ending hunger, promoting health and quality education, gender equality has become a separate goal. Namely Goal 5, *“Achieve gender equality and empower all women and girls,”* (United Nations 2015:18). At the same time, it is a prerequisite for the success of the entire development agenda.

Gender equality is a condition where women and men are equal in their rights, in opportunities, members of both genders are perceived as valuable, and treated with the same respect, and no discrimination based on sex is accepted (UN OSAGI 2001; Cambridge University Press & Assessment 2024). Nowadays, we are still far from it. And the clock is ticking. Based on the United Nations (2023) estimates, in the current pace of change, we would need 300 years to eliminate under-age girls’ marriages, 286 years to ensure gender-equal legal protection and cancel discriminatory norms; 140 years to equalize opportunities to attain and perform leadership positions. And 47 years before both genders become equally represented in parliaments. Recent progress was partially ruined over the last few years, due to crises - the COVID-19 pandemic, current conflict outbreaks (e.g. the war in Ukraine, or the Middle East), and others that are protracted. Achievements are constantly being challenged by global change of climate. Statistically,

women are those, who bear most of the adverse effects (Gender Division 2023; United Nations 2023).

There is an urgent need to prioritize gender equality and women's empowerment, and there is a lot that can be done for the situation improvement and achievement of the best possible results towards the fulfillment of the SDGs. It requires larger investments in policymaking, proper policy implementation, and research to monitor the progress and evaluate all interventions carefully, based on quality sex-disaggregated data (FAO 2018; Azcona et al. 2023; United Nations 2023).

By presenting this study, we aim to contribute to the efforts. The main objective of our research is to explore agricultural cooperatives in Zambia as potential tools to enhance women's empowerment and tackle gender inequality. We employ data obtained from an evaluation of a development intervention, implemented by a Czech non-governmental organization in Zambia.

Using the Women's Empowerment Index, we compare how the components of women's empowerment are perceived and assessed by female members from 22 cooperatives that participated in the project intervention, and 21 control group cooperatives.

Secondly, by employing a multiple linear regression, we analyze potential determinants of the intensity of women's active participation in collective action, because members' active involvement potentially increases the benefits of cooperative membership (Dohmwirth & Hanisch 2019).

2. Literature Review

2.1. Definition and Measurement of Women's Empowerment

Based on the current body of literature, no consensus has been achieved in the matter of conceptualizing women's empowerment, and no unified approach established, on how to measure this multidimensional concept (Gram et al. 2019). Development researchers have published various approaches consisting of a variety of indicators to capture its complexity and evolution over time (Kabeer 1999; Ibrahim & Alkire 2007;

Alkire et al. 2013; Lombardini et al. 2017; Huis et al. 2017). There is a need for reliable quantification methods with internationally comparable, strong, and inclusive indicators of women's empowerment (Quisumbing et al. 2022) to track progress on a path towards a more equitable world. The data then can be used by policymakers, practitioners, and other development decision-makers who need to consider expected benefits and, on the other hand, possible negative effects to prevent (Galiè et al. 2019; Quisumbing et al. 2022, 2023).

Naila Kabeer (1999:437) in her often-cited article describes empowerment as „*processes by which those who have been denied the ability to make choices acquire such an ability.*” In other words, empowerment refers to “*the process of change*” which happens when people who have been disempowered (denied choice) become empowered (able to set their own goals and act by them) (Kabeer 1999:437). It moves beyond gender equality alone and includes broadening opportunities, making their own choices free from the dictate of gender roles and stereotypes. (UN OSAGI 2001; Quisumbing et al. 2022). As aptly expressed by Nomoto (2017:1), empowerment “*lies in the ability of a person to control their destiny,*” and “*lives vis-a-vis family, community, society, markets,*” (Jejeebhoy 2000:3).

Women's empowerment can be quantified in three interconnected dimensions: resources, agency, and achievements. Resources involve tangible and intangible preconditions that strengthen people's agency – not only material assets but also human and social capital, e.g. education, and information. Agency represents one's ability to identify own goals and pursue them, even when facing other's disagreement. This dimension involves decision-making, bargaining power, and positive indicators like self-esteem or self-efficacy, but also negative forms of exercising power like deception, manipulation, or even violence. The last dimension, achievements, can be characterized as outcomes in well-being (Kabeer 1999; Cunningham & Gupta 2023).

Women's Empowerment in Agriculture Index, a measurement tool designed for the agricultural sector, was introduced by Alkire et al. (2013) and developed together with the Oxford Poverty and Human Development Initiative (OPHI) and the International Food Policy Research Institute (IFPRI). Proceeding from Kabeer's (1999) definition and understanding of WE, it consists of two subindexes. The first, “Five domains of empowerment in agriculture,” measures women's empowerment on an individual level

in the following domains: decisions about agricultural production, access to and decision-making power about productive resources, control of use of income, leadership in the community, and time allocation. The second sub-index, “Gender Parity Index,” captures household gender parity – it compares the level of empowerment of female and male members within the same household (Alkire et al. 2013). Women’s Empowerment in Agriculture Index measures WE based on aggregate data. It became a foundation for more recently introduced measurement tools adapted to specific research needs (Quisumbing et al. 2022).

Women’s Empowerment in Livestock Index was suited to contexts where women farmers are predominantly occupied with livestock production as a major source of local livelihood (Galiè et al. 2019). Women’s Empowerment in Nutrition Index (Narayanan et al. 2019) explores how women’s achievements translate into nutritional outcomes: body mass index (BMI) and anaemia. Another specific index directly based on WEAI (Alkire et al. 2013), is the Project-level Women’s Empowerment in Agriculture Index (pro-WEAI) (Malapit et al. 2019), which was piloted on 13 studies of agricultural development projects in 9 developing countries in Africa and Asia by International Food Policy Research Institute (IFPRI) as a response to demand for an index that could be applied in project impact evaluations (Quisumbing et al. 2022). It consists of 10 indicators that measure women’s agency: intrinsic agency (e.g. autonomy in income, self-efficacy, attitudes about intimate partner violence against women, respect among household members), instrumental (input in productive decisions, ownership of land and other assets, access to and decisions on financial services, control over use of income, work balance, visiting important locations) and collective agency (group membership, membership in influential groups). Where intrinsic agency corresponds to Rowland’s (1997) “power within”, instrumental agency to “power to” and collective agency to “power with” (Malapit et al. 2019).

Lombardini et al. (2017) published a methodology based on (Alkire et al. 2013). The purpose of their study was “to share experience from Oxfam’s impact evaluations,” with development practitioners – offering internationally-comparable indicators, taking into account context specificity. Women’s Empowerment Index, which is presented, consists of three dimensions: personal, relational, and environmental (Lombardini et al. 2017). The personal dimension captures changes in women’s self-concept, self-

confidence, and perceptions of their roles. The relational level involves the woman's network - familial relationships, power relations within the community, communal politics, and markets. The environmental level represents changes in broader societal and political context. It includes both informal social and formal legislative norms and policies. The authors also demonstrate how the framework interacts with other concepts. Rowlands' (1997) model of power dimensions, where "power from within" (e.g. woman's perception of herself) and "power to" (ability to make choices and act accordingly) incorporate changes that happen at a personal level. "Power with" (e.g. a woman's social capital) and "power over" (eg. power relations with her husband, or another household member) both relate to the relational level.

A similar three-dimensional model to the one by Lombardini et al. (2017) for tracking changes in empowerment at the micro (personal context), meso (relational), and macro level (societal context), was presented by Huis et al. (2017). Their study focused on the impact of microfinance services on women's empowerment and emphasized the influence of time and culture.

In 2004, the African Gender and Development Index was established by the UN Economic Commission for Africa (ECA) to assist government policymakers in the evaluation of progress in gender inequality reduction and advancement in women's empowerment. This index is meant to use national-level data. It consists of two parts – Gender Status Index (involving economic, political, and social indicators) and African Women's Progress Scoreboard (covering opportunities, agency, and capabilities), together with women's rights (Economic Commission for Africa 2004).

Conceptualization through economic, social, and political lens was also applied by (Eyben et al. 2008). Empowerment in the economic sphere is measured with indicators like access to finance, and access to markets, and considers whether poor people are fairly rewarded for their contribution to economic growth. The social dimension involves both individual and collective agency, e.g. household distribution of power (individual "power from within") or collective action (collective "power with") which enables them to claim their rights that have previously been denied to them. The political dimension comprises e.g. participation in politics, starting from local proceeding to higher levels, where people express their concerns, their voices become louder and heard, and they are represented in the democratic process (Eyben et al. 2008). The authors stress the need for all spheres to

be addressed in policies and carefully implemented since progress in one does not automatically translate into changes in the other spheres. To achieve long-lasting change, adequate attention must be paid to all three dimensions (VeneKlasen & Miller 2002; Eyben et al. 2008).

2.2. Cooperatives as Tools for Women’s Empowerment

A cooperative is an “autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise,” (International Cooperative Alliance 2017:99). They stem from values of “self-help, self-responsibility, democracy, equality, equity, and solidarity,” (International Cooperative Alliance 2024). Cooperatives are guided by seven core principles that navigate their operation: “voluntary and open membership, democratic member control, member economic participation, autonomy, and independence, education, training, and information, cooperation among cooperatives, and concern for community,” (International Cooperative Alliance 2024).

Cooperatives have gained increasing attention in strategies aiming at enhancing sustainable rural development (United Nations 2015) and improving life conditions of smallholder farmers, for their ability to bring benefits in all three development dimensions – economic, social, and environmental (Ferguson & Kepe 2011; Bizikova et al. 2020).

When cooperatives function based on the stated values and principles, positive outcomes stem from their nature. Besides fostering economic growth, poverty alleviation, improving livelihoods, and increasing smallholder farmers’ opportunities, they have significant potential to bring social benefits, which can, in the long-term, even exceed the economic ones – e.g. social cohesion, democratic governance, or members empowerment (Ferguson & Kepe 2011; Duguid & Weber 2016; Bizikova et al. 2020; Fernando et al. 2021). Simultaneously, cooperatives can facilitate the adoption of environmentally sustainable practices and collective response to climate change (Ferguson & Kepe 2011; Lecoutere 2017; Bizikova et al. 2020). This chapter describes various cooperative contributions in more detail, with a special focus on the empowerment of women smallholder farmers.

Cooperative enterprises are being founded mainly in expectation of economic benefits. They have the potential to improve farmers' productivity, increase their yields, and generate income (Ferguson & Kepe 2011; Hao et al. 2018; Bizikova et al. 2020; Fernando et al. 2021), achieving that by removing barriers to farmers' access and participation in markets, through reinforcing their economic position (Hao et al. 2018; Tadesse et al. 2020).

Collective action can bring economies of scale when members pool production and sell in bulk (Tadesse et al. 2020; Fernando et al. 2021), reduce transaction costs of production, processing, or transportation), and lower costs of marketing (Fernando et al. 2021; Blekking et al. 2021). Through information sharing and collective bargaining, farmers negotiate better prices with buyers. Compared to a situation when they individually sell to "middlemen" who take advantage of smallholders' weaker position, especially in distant rural areas (Ferguson & Kepe 2011; Bizikova et al. 2020), association in cooperatives makes their negotiating position stronger and at the same time, they are more successful in meeting buyers' demands of quantity, or regularity of supply. In the same way, they negotiate for better prices of agricultural inputs (e.g. fertilizers or improved seeds) of a better quality (Hao et al. 2018) provided by governments or private sellers (Blekking et al. 2021).

Cooperatives should also facilitate access to agricultural services (Ferguson & Kepe 2011). As an organization, they become eligible for institutional support for cooperatives, e.g. in the form of financial or technical assistance from governments or NGOs (Tadesse et al. 2020). Using cooperatives as channels to distribute support to farmers is common (e.g. subsidized input distribution). Membership grants easier access to credit and other financial services provided by financial institutions, or by the cooperative itself, in the form of financial credit schemes. Either on a self-help basis or with external financial support (Tadesse et al. 2020; Blekking et al. 2021). Cooperative associations facilitate access to technology and mechanization and decrease the time necessary for its adoption (Manda et al. 2020; Yang et al. 2021). Members can collectively invest in improved inputs, or farming equipment which is then shared among members to increase their farming productivity or to add value to their products. Buying a tractor or processing collectively are some examples. Because household-owned mechanization (if available) is mostly used by men, women must manage manual

drudgery, which is inefficient, and physically demanding. In such cases, cooperative services may become a game changer for female farmers (FAO 2018).

Cooperatives help establish profitable business contracts by providing lucrative market linkages with wholesalers or important market players such as the World Food Programme (Ferguson & Kepe 2011). Those cooperatives whose members supply to large-scale, more demanding buyers, usually provide training and assistance on quality control, food security, and safety measures, or compliance with certification standards (Ferguson & Kepe 2011; Hao et al. 2018; Bizikova et al. 2020; Fernando et al. 2021). Collective organizations also create new employment opportunities and overall contribute to higher participation of women, but also men, in the formal economy (Duguid & Weber 2016). Formal employers provide generally safer working conditions due to state regulations. On the other hand, this benefit rather concerns larger cooperatives that can afford to hire employees. A small-scale village cooperative does not automatically become a contributing part of the formal economy.

Another potential advantage of cooperative membership which ranks among social benefits, is the transfer of knowledge and skills among fellow farmers (Duguid & Weber 2016). Working together with co-members as well as cooperation with other cooperatives, facilitates the learning process, and adoption of new practices. Positive spill-over effects on cooperative non-members have also been observed (Ferguson & Kepe 2011). Cooperative members who share information with non-members in their communities, inspire others to learn from them.

Due to improved access to training, cooperatives provide an opportunity for members to better understand the market, learn how to benefit from it, to gain new leadership and business skills (Ferguson & Kepe 2011; International Cooperative Alliance 2017). Especially women, who typically face more barriers to access to formal education, can largely benefit. Informal education plays an important role in developing their potential to become competitive market participants (Duguid & Weber 2016). It broadens their opportunities to generate income and increases their self-confidence and self-efficacy.

In private lives, they demand more respect from their intimate partners, family, and community members. Women's control over resources and intra-household bargaining power may increase, as a result of participation in collective action. Overall,

it can enhance individual agency, which will, in turn, stimulate higher productivity and economic gains, and increase social status (Ferguson & Kepe 2011; Lecoutere 2017; Dohmwirth & Liu 2020). They gain the courage to participate in markets dominated by men (e.g. in cash crops) (Ferguson & Kepe 2011) and perform higher value-chain positions that have traditionally been reserved for men (Lecoutere 2017). The collective arrangement of cooperatives can also bring better chances to be heard and press for own rights (Ferguson & Kepe 2011). Through engagement with civil society, cooperatives have an opportunity to increase women's voices to influence political decision-making (Duguid & Weber 2016).

According to Ferguson & Kepe (2011), cooperative settings have the potential to balance out gender inequality and "affect broader social arrangements," to alter cultural norms adverse to women and inspire further positive change. However, they cannot be considered a cure-all. It is necessary to mention that the possible benefits of participation, are hindered by the same barriers they aim to remove (Majurin 2012; Lecoutere 2017). For example, the involvement of women in cooperatives, in terms of membership, is lower than 30% in most African countries, while more than 70% of members are men (Duguid & Weber 2016). Like in general society, gender inequality is present within cooperatives. It may cause a lower degree of influence of female farmers in the group (Duguid & Weber 2016), women's participation can be affected by overwhelming household responsibilities and consecutive lack of time (Lecoutere 2017), or by mobility constraints due to necessary husbands' permission (Meier zu Selhausen 2016). Some of these constraints are easier to remove, change of others, deeply rooted in social norms, is a long way run.

Positive effects of collective action may also be reduced by a lack of trust, opportunistic behaviour, and an imbalance in the degree of involvement of individual members, which demotivates those who feel more active (the so-called problem of freeriding). These obstacles lead to the weakening of social capital, even the complete disintegration of the group (Tadesse et al. 2020).

Cooperatives may be an effective development strategy and institutional support of farmers' organizations may contribute to reducing poverty and inequality, if well implemented (Majurin 2012; Blekking et al. 2021). However, one of the inconveniences is, that cooperatives are not accessible to the most vulnerable, most of whom are female.

Rural farmers living in extreme poverty, with no land to cultivate, no resources (e.g. to pay a membership fee), who are illiterate and lack very basic skills to engage in any kind of business, are automatically excluded (Bizikova et al. 2020). It is the role of institutions to implement an adequate support net involving all kinds of social, financial, educational, and other instruments, not to leave these people out. Otherwise, there is a risk of deepening inequality in rural areas and widening the gender gap (Majurin 2012; Blekking et al. 2021).

2.3. Gender Equality and Women's Empowerment in Zambia

Like most Sub-Saharan African countries, Zambia is characterized by deep-rooted largely present patriarchal norms and traditions, the change of which does not happen overnight and requires systematic efforts. Though progress has been made through policy and legislative changes, within past decades, still, there are areas of persisting challenges and failures. Women, on their way to becoming fully acknowledged society members, face many constraints. Progress is slower in highly conservative rural areas where traditional mindset persists, and challenging it takes a lot of time (Ministry of Gender 2019).

Zambian women are limited in their decision-making power, compared to men. Female representation in politics is far from equal, they are highly under-represented on all levels of governance. National Assembly of Zambia has 15.6% female representatives, contrary to 84.4% male members (National Assembly of Zambia 2024). In local governments, the ratio of women is only 8% (Gender Division 2023). In such settings, women have little influence on the legislative process and norms that have a direct impact on their lives (FAO 2018), thus, policies and legislation may omit women's perspectives in fundamental matters (Malasha et al. 2020). Women's participation in leadership and positions of power in Zambia (considering positions in management of state-owned enterprises, in Civil Service, or as Permanent Secretaries), reached its maximum of 33% in 2019. This was an achievement of women's participation among Directors in the Civil service. In other cases, female leadership reached just above 20%, compared to more than 75% of management positions occupied by men (Gender Division 2023).

The low women representation is especially strong in rural communities. Women's participation in different kinds of farmer and community organizations is lower compared to men's (Lombardini et al. 2017; FAO 2018). Female leadership in rural institutions is inadequate, although women's engagement in farming is essential - the country would hardly ensure food security without their contribution (FAO 2018). The low number of female candidates, and the fact that they often self-select themselves away, is largely caused by time constraints given by their traditional roles as caregivers, household chores, low literacy and education levels, a need for their husband's approval or low confidence (Cole et al. 2016; Malasha et al. 2020). The situation is mildly improving due to better accessibility of education for girls. More educated women can take leading positions; however, they do face constraints in the execution – unequal treatment and their voice may be considered of secondary importance (Cole et al. 2016; Malasha et al. 2020; Gender Division 2023).

Employment opportunities in Zambia are gender unequal, female labour is less paid (Gender Division 2023) and less formalized. Only 33% of women are formally employed compared to 67% of men out of population with a formal job position. Women who participate in the formal economy, usually perform low-skilled jobs, with lowest salaries, across sectors. Females also make up 64.8% of unpaid workers in their respective families (Ministry of Labour and Social Security 2022).

Gender-based violence is culturally tolerated (Gender Division 2023). Different forms of physical, psychological, and sexualized violence are widespread, and economic deprivation and men's abandonment of their families are not exceptional (Gender Division 2023). Women who attempt to assert themselves face a risk of intimidation, escalating aggression, or threats of divorce (Malasha et al. 2020). Language in the form of proverbs and sexist expressions holds women in subordinate positions (Milimo et al. 2004). Promiscuity and polygamy are perceived as a sign of male power. These attitudes strengthen men's positions and increase women's insecurity and fear that they are replaceable. Men can move around the country and live with other women for some time, which also affects families' food security due to lower farm labour availability (Cole et al. 2016).

Underage girls' marriages present another issue. Females are seen as fortune because marriage brings wealth to the bride's family. The practice diminishes due to

government and NGO sensitization of the population; however, the progress has been slow. Poverty, girls' dropouts of school, teenage pregnancies, cultural beliefs, etc. All these factors encourage the harmful practice of child marriage (Gender Division 2023).

Concerning workload, women in Zambia are double burdened compared to men. They are expected to contribute to family income generation, and simultaneously, it is their responsibility to cook, collect firewood, fetch water, and care for family members. A substantial proportion of their work is not economically valued, and no compensation is provided to them. These factors put "*the cycle of feminization of poverty*" in motion (FAO 2018:21). Women have less free time, and even their chance to leave home is limited due to many chores. The scarcity of women's time is one of the reasons why development programs must be tailored to their needs, not to add to their burden (Milimo et al. 2004; Cole et al. 2016; Malasha et al. 2020).

Concerning ownership of productive resources, mainly land, women are hindered in access, property and tenure rights, and inheritance. Land in Zambia can be owned and allocated either through state structures (10%) or customary systems (90%). While the constitution guarantees Zambian citizens equal rights for both genders, and no discrimination based on sex is allowed, it provides an exception for the application of personal customary law, which traditionally favours men (FAO 2018). Most land in Zambia is under customary management, which puts women in a significantly disadvantaged position (Mudege et al. 2022). They can usually access productive resources through their male partners and relatives. However, they are not secured formally (Gender Division 2023). In case a woman's husband dies without joint land ownership being previously established, she can suddenly encounter material insecurity, when her husband's relatives claim it. Under customary law, this is a common practice, a form of economic violence (FAO 2018; Gender Division 2023).

Generally, a lack of property rights means that women cannot use it as collateral in dealing with financial institutions, accessing agricultural inputs, or decision-making about production. Therefore, they are unable to fully develop their potential to contribute to their own, family, or the country's prosperity (FAO 2018). It also weakens their motivation to invest in the land and its conservation (Malasha et al. 2020). Women officially gained rights for land ownership in 1996 when the Land Act was approved, but still, there are far more male landowners. Nowadays, 50 percent of all distributed land

must be allocated to women, and the rest to both women and men. But the reality is different. In 2019 (the latest available data), still almost two-thirds were given to men (Gender Division 2023). Instruments for policy enforcement are missing, and the situation is worsened e.g. by requirements to prove capacity to develop and run a business, to present payslips and official bank documents, which automatically disqualifies women, who are not formally employed in most cases (FAO 2018). Low education and knowledge on how to go through the process of land acquisition, female poverty, or limited access to financial services are only a few reasons for the policy's inefficiency (Gender Division 2023).

Smallholder farmers in Zambia are often excluded from participation in more profitable markets. On top of that, women are hindered by specific mobility limitations (lack of time for traveling, need to ask husbands for permission) and poor access to market information (Cole et al. 2016; FAO 2018). Less women, for example, own or use smartphones which could be used for marketing (Hiriyur & Chettri 2020). Women lack the material resources that are necessary to start an income-generating activity. Financial services are often far from their reach since they cannot offer anything that could be used as collateral (FAO 2018; Gender Division 2023). Missing capital is one of the reasons why women are not engaged in more lucrative positions in value chains. They cannot afford the initial investment, e. g. in processing equipment. Limited access to technology (Cole et al. 2016; Malasha et al. 2020) is characteristic of women smallholders. Mechanization is more often used by men, who are usually household heads. Women use inefficient traditional methods of tillage and weeding, even though they perform most of the hard work on family farms (FAO 2018).

Household food security largely depends on women, who grow crops for consumption by family members. This is given by female gender roles. At the same time, they are not allowed to make decisions about whether to use their farm produce for future consumption or sale, which can eventually lead to household food insecurity (FAO 2018). Men, on the contrary, produce mainly cash crops for sale (Cole et al. 2016)

Due to their responsibilities for collecting water and firewood, women are more affected by climate change impacts. In rural areas, where the majority of Zambian women live (World Bank 2023b), they must walk longer distances to provide a household with enough resources for daily life, therefore they become more exposed to risks on the way,

including gender-based violence and increased disease burden. Women's adaptation to environmental impacts like season instability, unexpected floods, or droughts, is slower, compared to men due to their limited access to technology, and resources (FAO 2018; Gender Division 2023).

2.4. National Policy Framework for Women's Empowerment in Zambia

Zambia is a party to many international agreements and protocols on women's rights: Beijing Declaration and Platform for Action (1995), Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa, known as the African Women's Rights Protocol, SADC Declaration on Gender and Development, with its annex, Prevention of Violence Against Women and Children (Human Rights Watch 2007). In addition, the country has created its own robust legislative and policy framework to support gender equality and empowerment of women and girls, which means tremendous progress. To proceed from legislation, gender equality is stated in the Constitution (Amendment) Act no. 2 (2016), further elaborated in Gender Equity and Equality Act No. 22 of 2015 and the Anti-GBV Act No. 1 of 2011. Concerning policies, it is mainly National Gender Policy (2023), National Health Policy, National Strategy on Ending Child Marriage in Zambia 2016-2021, Zambia National Action Plan on Gender-Based Violence (2008-2013) (new one is expected), and other documents. (FAO 2018; Gender Division 2022a; World Bank 2023b).

Since gender equality concerns all areas of national, regional, and local policy, to *“coordinate, monitor and evaluate the implementation of the National Gender Policy to facilitate gender-responsive development”* (Gender Division 2022b), Zambia has established the Gender Division, a department under the Office of the President. It was known as the Ministry of Gender until 2021 when the administration changed after the general election. (Gender Division 2022c, 2023). Gender division is responsible for promoting gender equality and women's empowerment in national institutions and public administration. It is mandated to *“formulate and review existing policies and strategies from gender perspective,”* to *“facilitate the formulation and review existing national*

legislation in order to ensure gender responsiveness". Its operations involve gender mainstreaming, advocacy, awareness raising, etc. (Gender Division 2022b).

The government's commitment to addressing gender inequality is indisputable (World Bank 2023b). The country made progress in the last two decades. Gender parity has been achieved in primary school enrolment, previously high birth rates have fallen slightly, and child marriage and infant mortality rates have decreased substantially (Gender Division 2023; World Bank 2023b). However, challenges persist in girls' lower educational attainment rates, compared to boys', women's low representation in decision-making, economic participation (importantly, women's rates of formal employment), and access to productive resources (Gender Division 2023; World Bank 2023b). Zambia still has a long way to go in tackling high female poverty levels and fighting against gender-based violence (World Bank 2022).

In terms of policy application, numerous systemic barriers cause a gap between the policies in place and practice. There has been low consistency in policy implementation and its enforcement, inadequate budgetary allocations (FAO 2018), inadequate monitoring and evaluation of implemented programs, lack of finances for research, of skilled professionals for research and gender mainstreaming, lack of sex-disaggregated data, limited options for progress tracking due to low comprehensibility of monitoring outputs (World Bank 2023b). Coordination of the "*gender machinery*" has been challenging, among other, due to staffing shortages, therefore, isolated efforts of individual institutions to promote gender equality were not very effective (FAO 2018). Even so, the establishment of the Gender Division as a central body focused on gender issues is a significant step forward. It has the potential to become a key tool to support gender equality and women's empowerment from a macro perspective (World Bank 2023b).

Existing policies to support Zambian women have not been efficient enough to bring the expected change (Gender Division 2023). Little attention has been paid to actual women's needs. For a substantial part of the female rural population, institutional support is out of reach. These women live in poverty, many cannot read and write. They have limited access to information, therefore, their chance to get to know about the existence of the benefits, is rather low. All interventions must be tailored to their needs, e.g. timing,

and distance that must be overcome to access the support, not to add on their burden (Cole et al. 2016; Malasha et al. 2020).

Another obstacle is that policies mostly created by men do not address the root causes of problems, that arise from cultural norms, traditional notions of roles, and hierarchy. The impact of interventions is, consequently, lower. Women face stereotypes, judgment, or even higher risks of facing gender-based violence. For example, when they start working in male-dominated sectors or performing positions traditionally reserved for men (Gender Division 2023).

Activities to support gender equality focus on women and there is no significant involvement of men, local tribe authorities, and religious leaders. Awareness raising focused on women is important, however, not effective on its own. To achieve sustainable social change, it is essential that interventions are also targeted at men, and that they include activities working with women and men at the same time, as well as for women and men separately. Men themselves must become active actors in the process of change, its co-owners (World Bank 2023b). In the field of socio-cultural patterns, cooperation with traditional tribal and religious authorities, as guardians of traditional cultural values, is necessary. With their “*blessing*,” involvement, a process of change, which is sustainable and will not cause conflicts in local communities, may begin. The establishment of effective cooperation might be challenging, but numerous examples exist where such cooperation eventually brings about positive change (Cole et al. 2016).

The above-mentioned challenges are interconnected and require a complex multi-sectoral approach to look for possible solutions and not to cause more harm. Addressing related causes of gender inequality one by one through policy-making and supportive interventions should lead to progressively faster betterment (Gender Division 2023; World Bank 2023b).

2.5. Country Specifics to Development Strategies

According to the UN Committee for Development Policy (2023), Zambia is one of the Least Developed Countries. It classifies among states with the highest poverty and inequality rates worldwide (World Bank 2023c). The national “*Vision 2030: A prosperous middle-income nation by 2030*” (Republic of Zambia 2006), which is the

backbone of the country's development agenda, guides government interventions as well as international development cooperation, towards a clear goal - industrialized Zambia that ranks among middle-income countries.

Nowadays, Zambia is an agrarian-industrial economy, relying on the agricultural sector, mining, manufacturing, and tourism on its path towards economic transformation (Ministry of Finance and National Planning 2022). Services and trade have been growing, private sector is gaining increasing importance. However, the low diversification of the economy and its dependence on the few largest sectors increase its vulnerability to unexpected events and crises, slow down its adaptation to changes, and hinder economic growth, accompanied by low labour force participation. Total labour force participation in Zambia is 36%, however, the number is lower for rural areas - 17.6% for females and 29.4% for males (IMF 2023b).

Mining is one of the key sectors due to the abundance of copper in the Copperbelt region. However, the success of the industry rises and falls, depending on the development of highly volatile mineral prices. In 2021, the share of the mining sector in Zambia's GDP was 17.5%, in contrast to a mere 2% share of employment (IMF 2023b).

Agriculture is a major source of livelihood for around 70% of Zambians, who highly depend on it (and again, higher for rural areas). However, the sector growth is lower than the country's population growth (which is 2.7% per year) (World Bank 2023c). Although agriculture employs 24% of the share of the employed population, its contribution to GDP is 3.4%. Zambian agriculture is characterized by low productivity, inadequate mechanization, and weather dependence. Recently, the situation has been exacerbated due to climate change. It causes irregularities in rainfall patterns (IMF 2023b) which become unpredictable for farmers (*Agribusiness for LIFE – Livelihoods, Innovation, Food & Empowerment* 2018).

In recent years, Zambia has experienced an economic recession exacerbated by the depreciation of the local currency “kwacha”, the COVID-19 pandemic which heavily impacted the whole country, and the decline in copper prices. The combination of those and other negative factors contributed to increased poverty levels in the country (IMF 2023b).

Poverty data on Zambia vary, depending on the applied definition of poverty and the level a poverty line has been set on. Based on the last available World Bank data from

2015, more than 61% of the population live under \$2.15 per day, an international poverty line (World Bank 2023c). According to the World Poverty Data Lab (2024) expert forecast, 58% of people in Zambia will live under the same poverty line in 2024. The poverty rate indicated in the national statistics report (Zambia Statistics Agency 2023), reached 60% in 2022, compared to 54.4% in 2015. The calculation was based on the national poverty line of 518 ZMW per adult monthly consumption (indispensable food and non-food items), which is equivalent to approximately \$1 per adult daily consumption (author's calculation using average 2022 mid-exchange rate, Bank of Zambia (2024)). Meaning, that in 2022, 60% of Zambians lived under the national poverty line, approximately \$1 per day (Zambia Statistics Agency 2023).

Extreme poverty incidence is higher in rural areas. In 2022, 78.8% of the rural population lived under the national poverty line. For the urban population, the level of poverty reached 31.9%. Rural women and girls are those, who bear most of the poverty burden, due to lacking resources, opportunities, and coping mechanisms. Female-headed households are also more likely to become poor (in rural areas 83.4%, whole Zambia 63.4%) than those with male household heads (in rural areas 77.3%, Zambia 58.8%) (Zambia Statistics Agency 2023).

2.5.1. Rural Development Strategies in Zambia

In the Eighth National Development Plan 2022-26, the Ministry of Finance and National Planning (2022) identifies four strategic areas of development in Zambia. Three of them directly relate to the spheres of sustainable development - economic transformation and job creation, human and social development, and environmental sustainability. The fourth is dedicated to good governance. Tens of strategies and hundreds of programs in Zambia nowadays address developmental challenges. In this subchapter, I present examples of strategies significant for rural development. Since most of them are interconnected, successful application of one strategy may potentially lead to improvement in an area/in areas, that have not been targeted primarily.

In this Plan period 2022-2026, the main strategy for the development of the agricultural sector, on which most of the rural population depends, is aimed at increasing production and productivity. The Government supports the growth of agribusinesses by enabling a trade policy environment and regulations that ease access to finance. Direct

farmers' support is delivered through the provision of inputs within the Farmer Input Support Programme (Manda et al. 2020; Ministry of Finance and National Planning 2022). Current priorities are improving the program targeting to provide support to the neediest beneficiaries and ensure fairness in input distribution (Ministry of Agriculture 2023). An electronic agro-input system is being piloted in 2 provinces (Ministry of Agriculture et al. 2023). According to the Plan, other agricultural development programs aim e.g. at increasing accessibility of extension services, value-addition to products (processing), creation of larger storage capacities, and improving logistics. Enhancing access to agricultural mechanization is also pursued to increase farmers' productivity (Mulanda & Punt 2021). Especially for female-headed households, who are less likely to access it (Manda et al. 2020). In March 2024, the Government launched the National Agricultural Mechanization Strategy (FAO 2024).

To promote sustainable agriculture, the GRZ encourages diversification of crop production for more sustainable land management and supports livestock farming, fisheries, and aquaculture. It also promotes the usage of ameliorated crop varieties and breeds that are more resistant to diseases and better adaptable to changing climate (Ministry of Finance and National Planning 2022; World Bank 2023a).

Increased attention to and financial support of value-addition to primary products through light manufacturing, which requires higher labour intensity, should contribute to increasing low economic participation. For example, processing of agricultural products (into foods, textiles, etc.), timber processing, mineral processing, or engineering. Interventions in this field aim to accelerate the growth of the manufacturing industry, which will later become a driver of a country's industrialization (Ministry of Finance and National Planning 2022).

An investment in infrastructure - modernized transport and its maintenance, pledged by the Government, involving rural road development, shall increase the accessibility of remote areas, facilitate mobility of the rural population, and farmers' access to markets and to all kinds of services (World Bank 2024). Management and productive use of water resources, development of irrigation systems, investment in clean water supply infrastructure, solid waste management and sanitation, together with promotion of hygiene practices, aim at better life conditions for Zambians. In rural areas, access to safe water is planned to increase from 58% in 2018 to 67% by 2026. (Ministry

of Finance and National Planning 2022). The development of infrastructure is essential in addressing spatial inequality, which is a significant challenge in Zambia (World Bank 2023c).

Energy sector reforms, crucial for industrialization, are focused on enhancing electricity generation capacities, sustainability of the sector (promoting clean energy sources), stabilization (attracting private sector investments, diversification of the sector), and rural electrification (Kaoma & Gheewala 2021). In 2021, 14.5% of the rural population in Zambia had access to electricity (World Bank 2021). Due to enabling the use of alternative energy sources which can be used in remote areas, more households and businesses should gain access by the end of the Plan period (Ministry of Finance and National Planning 2022).

The economic transformation of Zambia will be driven by the private sector, which is nowadays in the developing stage. In this Plan period, the Government supports private investment through policy reforms to restore the macroeconomic stability of the country (IMF 2023b) and focuses on the development of small and medium-scale enterprises through microeconomic interventions. The development of cooperatives is one of the focus areas of the strategy, accompanied by the creation of an enabling environment through access to financial services designated for MSMEs, facilitating access to domestic and international markets, provision of market linkages to larger market players, promotion of quality through standardization, certifications. (Ministry of Finance and National Planning 2022).

A country can flourish only when the population actively participates in its development, the GRZ aims at facilitating the participation of Zambians. The creation of employment opportunities is crucial, among others due to an increasing number of youths, given the high population growth (IMF 2023b). Together with a formalization of the informal sector. Enforcement of labour laws to ensure decent work conditions for all is no less important. To enhance economic empowerment, the strategy focuses on access to and usage of affordable finance, with special attention paid to women, youth, people with disabilities, and the rural population. Focus on gender equality in employment and access to decision-making positions has been found essential (Ministry of Finance and National Planning 2022; Gender Division 2023).

Supporting interventions that enhance the capacities of Zambians to achieve their potential through the provision of quality education and the development of skills are among the most important strategies for human development (IMF 2023b). GRZ programs in the field involve e.g. free formal education up to a secondary level of schooling (UNICEF 2022), stipends to the most vulnerable students, increasing school attendance and low completion rates (for example through menstrual hygiene promotion and raising awareness on sexual and reproductive health, to enable informed choices by the youth, prevent early pregnancies and transmission of STDs). Increasing the number of years of schooling, especially achieving gender parity in school completion levels, is highly effective in accelerating not only human development, but also boosting the economic growth of the country (IMF 2023b). Promotion of vocational, technical, and business skill development, as part of formal education, as well as in the private sector (apprentice- and mentorships, upskilling, reskilling...), is particularly relevant for the growing young population (Ministry of Finance and National Planning 2022).

To stay healthy and productive, the population needs access to quality health care and nutrition. Through planned interventions such as extending health insurance to the informal sector, increasing the availability of health professionals, access to health care via mobile health services, and affordable medication, the Government seeks to solve the situation of unaffordable health care and other public health challenges (Ministry of Health 2012, 2022; Ministry of Finance and National Planning 2022; IMF 2023b). Population food security and nutrition are enhanced by the promotion of sustainable food systems, teaching children and youth healthy feeding habits, provision of nutritious meals at schools, and promoting sports and healthy lifestyles (Ministry of Finance and National Planning 2022; World Food Programme 2023).

Several protection measures to create a reliable social safety net to tackle poverty and inequality, and enhance the welfare of the poorest, most vulnerable, and those at risk of social exclusion, have been put in place. Zambian social protection system provides two kinds of welfare benefits - Social Cash Transfer and Food Security Pack (IMF 2023b). The development of services to mitigate GBV and its impacts is among the priorities of the Government (World Bank 2022). Empowerment schemes to address the economic and social vulnerability of the population (which positively impacts incomes), programs decentralization to reach the target population closer to their respective

communities, and provision of social services are involved in the Plan as well (Ministry of Finance and National Planning 2022).

Concerning government interventions to enhance environmental sustainability, some of the strategies have already been mentioned along with related interventions from economic and human development spheres. Overall, these efforts focus on building resilience of communities, sustainable livelihoods, and farming, community resource management, lowering dependence on natural resources, full exploitation of affordable alternative resources, sustainable technologies, and innovation (World Bank 2023a). Investment in science, boosting research, and focus on data collection, in terms of quality and quantity, is substantial for all development efforts. (Ministry of Finance and National Planning 2022)

In the field of good governance, the government aims to reinforce the rule of the law to reduce developmental inequalities, fight against corruption and implement decentralization in public administration, and transfer implementation of government-supported interventions on the lower level to ensure the support corresponds to local needs (IMF 2023a, 2023b). Also, to diminish gender disparities, female participation in decision-making at all levels of governance will be enhanced by GRZ in this Plan period (Ministry of Finance and National Planning 2022).

2.5.1.1. Bilateral Cooperation with the Czech Republic

Since 2010, Zambia has been one of the priority countries of Czech development cooperation conducted by the Czech Development Agency (CDA) under the Ministry of Foreign Affairs of the Czech Republic. Through this specific framework of institutional support, Czechia continues its existing partnership with Zambia in the field of development cooperation. Its purpose is to support Zambia on its way to meeting its sub-goals defined in the Republic of Zambia (2006), following the international framework “2030 Agenda for Sustainable Development” and contribute to the achievement of the 17 global development goals. The partnership proceeds from priorities defined by the Zambian government. The Czech Republic offers its recent historical experience with economic and social transformation, overall know-how, and expertise (Ministry of Foreign Affairs of the Czech Republic 2018).

The Czech Republic supports activities that contribute to the development of small and medium-size farmers, their access to markets, diversification of farm production, and improving its quality. CDA supports interventions aiming at poverty and hunger reduction, improving livelihood and the overall situation of the primarily rural population in Zambia (Ministry of Foreign Affairs of the Czech Republic 2018).

2.6. Agricultural Cooperatives in Zambia

The history of co-operatives in Zambia dates to 1914 when the first agricultural co-operative was established by colonizing farmers from Europe. Until nowadays, most cooperatives in Zambia operate in agriculture. Since independence in 1964, they have been part of the agenda of almost every political administration, aimed at increasing agricultural production and productivity and reducing (particularly rural) poverty (Mtonga 2012). In the past, the cooperative agenda in Zambia was mostly managed by the Ministry of Agriculture, depending on the state administration set up at the time. Currently, it belongs under the Ministry of Small and Medium Entrepreneurship Development (2022), specifically the Department of Cooperatives and Entrepreneurship Development. The operation of cooperatives, starting from their creation until their dissolution, is regulated by the Cooperative Societies Act No. 20 of 1998 and the Cooperative Societies Regulations of 1999 (Blackhall Publishing 2019). Current legislation in Zambia is favourable to cooperatives (Lungu 2020). They have become a major tool used by the government to stimulate rural development (Ministry of Finance and National Planning 2022).

The cooperative movement in Zambia operates on four levels. The first level consists of the primary cooperatives in individual districts, which together form the District Cooperative Union (DCU) (second level of cooperative operation). Individual DCUs then form a Provincial Cooperative Union, one in each province (third level). Ten Provincial Cooperative Unions jointly own the Zambia Cooperative Federation, the fourth and highest level of the cooperative movement (Lolojih 2009; Zambia Cooperative Federation 2024)

In 2002, the Fertilizer Support Programme (FSP) was initiated by the government. Since then, the program aimed at enhancing the accessibility of subsidized inputs –

fertilizer and improved maize seeds. In 2008, its scope widened, and the name was changed to Farmers Input Support Programme (FISP). Farmer-based organizations became more widely known and important due to subsidized inputs becoming accessible only through cooperatives or similar farmer associations (Manda et al. 2020).

The situation of long-term stagnant or completely non-functional agricultural cooperatives, which were created primarily to obtain government subsidies, and exist only “on paper,” is problematic (Blekking et al. 2021). Limiting access to subsidized inputs to members of farmer organizations encourages violation of cooperative principles and values from their foundation. For example, voluntary participation, joint ownership, and sharing benefits (International Cooperative Alliance 2020; Manda et al. 2020). Simultaneously, this approach to supporting smallholder farmers in cooperatives, leads to the exclusion of other smallholders, from accessing the subsidized inputs. Very small farmers (mostly female) are less likely to be cooperative members (Fischer & Qaim 2012). Whether FISP is a form of farmer support that is overall effective in enhancing farmers’ production and productivity, remains to be a question (Blekking et al. 2021).

The official Registrar of Cooperative Societies, to our best knowledge, has not been published online. Thus, the numbers and shares of cooperatives in sectors and provinces are unknown. Publicly available data on the total number of cooperatives in Zambia varies by orders of magnitude (Lolojih 2009; Mtonga 2012; International Cooperative Alliance 2020). Due to the unavailability of official data on cooperatives in Zambia, it is not possible to carry out further analyses, like comparing the development of the cooperative sector before and after the FISP introduction.

2.7. Development Intervention to Agricultural Cooperatives in Western and Central Province of Zambia

The investigated development intervention took place in the years 2018-2021 in two provinces in Zambia – Western (Mongu, Limulunga, Kaoma, and Nkeyema districts) and Central Province (Mumbwa district). *“The project focused on building the capacities of cooperatives to operate their agri-business productively and profitably. Training in good governance of the board and regular cooperative members was supposed to improve management and understanding of the cooperative’s principles. Selected*

cooperatives also received technical capacity building in mechanization, value chain development, food processing technology, and diversification based on the identified value chain and market analysis,” (Hejkrlik et al. 2022). Another component of the intervention aimed to support medium-scale farmers. However, our study due to its nature and topic, focused solely on the project part that targeted cooperatives.

The intervention was funded with a grant from the Czech Development Agency and was carried out by a Czech non-profit organization with long-term experience in the implementation of international development projects. A research team from the Czech University of Life Sciences in Prague was a partner organization to the implementing NGO, responsible for project monitoring and evaluation (Hejkrlik et al. 2022). Due to CZU’s long-term participation in interventions of Czech Development Cooperation in Zambia, we possess the local knowledge of the region where the project was implemented.

Especially rural, and peri-urban areas were targeted by the intervention. Based on the project documentation, the target districts of Mongu, Limulunga, Kaoma, Nkeyema, and Mumbwa, were chosen, due to their comparatively better accessibility alongside the Lusaka-Mongu Road, and proximity to each other, as well as better accessibility to markets and various services required by the developing agribusinesses. Because in Zambia, rural roads are in poor condition, these factors played a role in the design of the intervention (*Agribusiness for LIFE – Livelihoods, Innovation, Food & Empowerment* 2018; Hejkrlik et al. 2022). Compared to the four districts in the Western province, Mumbwa District is a bit more developed, in terms of agricultural production and a degree of development of value chains. It was involved in the intervention due to the value-chain interconnectedness within the specified area.

3. Aims of the Thesis

The specific objective of the study was to answer the research question of whether cooperatives can be an effective tool to contribute to women's empowerment, using data from an evaluation of an external donor-supported intervention implemented by a Czech non-governmental organization in Zambia, through examination of:

1. Women's Empowerment Index, which will allow us to compare the degree of empowerment perceived by female members from cooperatives stimulated by the intervention, with the degree of empowerment perceived by female members from control cooperatives, that have not been stimulated by the intervention.
2. Factors influencing women farmers' active participation in agricultural cooperatives, since women's active involvement potentially increases the benefits of their cooperative membership (Dohmwirth & Hanisch 2019).

4. Methods

4.1. Sampling and Study Site

Western Province of Zambia is a diverse area, with a tropical climate. The terrain ranges from sandy upper lands, through savannah (grasslands), and woodland, to Barotse Floodplains (Blom 1984).

A large proportion of people in the province depend on the regular flooding of the Zambezi River, the regular rainy season to supply moisture to the soil, and the vast areas of rich surrounding forests. It is a crucial resource of livelihood for local prevalently smallholder farmers focused on crop production, due to nutrients provided to the soil, as well as for fishermen. The population's way of life is adapted to the natural cycle, involving regular seasonal migration, and all farming activities (World Atlas 2024). However, in recent years, the impact of climate change has strongly negatively affected the whole region. Irregular rainfall, prolonged dry seasons, and consequent disruption of annual flooding patterns lead to increasing difficulties experienced by smallholders, especially women, whose adaptation is even more limited. Despite the natural fertility of the soil, due to lack of knowledge, ineffective or even harmful agricultural practices, low mechanization, and low availability of technological solutions, agricultural productivity is low (*Agribusiness for LIFE – Livelihoods, Innovation, Food & Empowerment* 2018).

The main crops grown in the Western Province are maize, cassava, millet, sorghum, and rice. However, due to the low quality of the seeds, the crops are susceptible to diseases, which again leads to low production. Similar is the situation in livestock production. Animals reared involve cattle, pigs, goats, chickens, etc., however, the subsector suffers from the inaccessibility of veterinary services, market access constraints, and inadequate nutrition provided to the animals (*Agribusiness for LIFE – Livelihoods, Innovation, Food & Empowerment* 2018).

Based on provincial-level data from 2021, there were approximately 1650 cooperatives in Western Province, officially registered under the Department of Cooperatives and simultaneously evaluated as active by the provincial administration (Hejkrlik et al. 2022).

Figure 1: Map of Western and Central Province



Source: Beránková (2020)

The intervention targeted 22 cooperatives (approx. 1,100 cooperative members, of which 576 were women). Another 21 cooperatives from the same region were examined as a control group (approx. 1,100 cooperative members). The data collection lasted from October to November 2021. Qualitative data collection started in October. There were focus group discussions, semi-structured interviews with board members, and interviews with key informants. The collection of quantitative data followed in November 2021. Details about the data collection can be found in Chapter 4.3 - Data Collection.

To become cooperative members, the applicants first needed to pay a membership fee, which ranged depending on the cooperative, from the amount of 50 kwacha (the case of 8 project-participating and 12 control group cooperatives) to 100 kwacha (14 project-participating and 9 control cooperatives). Members were also required to purchase cooperative shares. One share had a value of 100 kwacha (which was equal to its price). Each member was supposed to own at least one share. The number of shares a member could buy and own was 10 in the case of project group cooperatives (the average number of per-member owned shares was 5). The maximum number of shares to be owned by members of control group cooperatives was 5 (on average, the number of shares owned was 2). Another membership condition was access to at least a small plot of land,

willingness to participate in group meetings and other collective activities, and an interest in working together with other members of the cooperative (Hejkrík et al. 2022).

The preselection of beneficiary cooperatives in the intervention districts was conducted in collaboration with partner institutions – the Ministry of Agriculture, Livestock, and Fisheries, and the Department of Cooperatives under the Ministry of Commerce, Trade, and Industry, who were familiar with local cooperatives' operation, able to assess their viability and contact all of them. The next step in the selection process was a meeting session organized for cooperatives by the intervention-implementing organization, where all criteria, and conditions for participation in the project were explained. Cooperative representatives could discuss any concerns with the NGO staff.

A set of transparent criteria was applied in the selection process. The evaluation guide for the assessment was provided to the interested cooperatives. After reviewing cooperative documentation, and discussions with members, the cooperatives were assessed against the criteria and received points based on the degree of following cooperative principles.

In the case of voluntary and open membership, the criteria were for example, that the group must be registered as a Cooperative or Association, present relevant documents (by-laws, the cooperative Constitution, or Articles of the Association), has to have a clear organizational structure established, with clearly defined lines of authority and responsibility. To prove their democratic member control, cooperatives were to present records of meeting minutes from the previous year (2017/18), to show the consistency of meetings with the Constitution, and to present the cooperative's resolution that they are interested in and committed to participation in the project. Member economic participation was verified by review of documents such as records of payment of membership fees, and bank statements from the previous year, checking whether the cooperative allocates surpluses to cooperative development and whether they can provide a written strategic/business plan. The principle of autonomy and independence was evaluated based on agreements with the cooperatives' partners and recommendation letters. To assess the fulfillment of the education, training, and information principle, a criterion of members' participation in training and workshops was applied. Cooperation among cooperatives was evaluated by historical/current partnerships with NGOs, and

membership in associations, unions, or organizations. Cooperatives' concern for the community was not assessed in this case.

In the end, the cooperatives' selection was based on the criteria described above, their genuine interest and motivation, potential, and willingness to participate actively in the intervention (involving their investment in the realization of their business plan).

The total population consists of all women cooperative members from the five districts in the Western and Central provinces. However, given the local context where the government incentivizes the establishment of cooperatives by allocating support in the form of subsidized inputs to smallholder farmers conditionally on coop membership, therefore, some cooperatives only exist "on paper," we decided to reduce the population size to the female members of cooperatives under the study, 22 cooperatives selected to receive the support within the intervention, and female members of 21 control group cooperatives. Altogether, the reduced population consists of 576 women from 43 cooperatives. Our sample size for the assessment is 319 and consists of 172 women members of supported cooperatives (project) and 147 women members of control cooperatives (non-project).

The sample cannot be considered representative due to the impracticability of employing random sampling methods. At the time of data collection, some of the farmers had already started working intensively in their fields before the incoming rainy season, and some others left their villages to collect subsidized farming inputs, thus, they could not be reached. These challenges with of unavailability of respondents were encountered in two districts, Kaoma and Nkeyema. Furthermore, not all farmers were willing to participate in the evaluation (Hejkrík et al. 2022). Therefore, two non-probability sampling techniques were applied, purposive and convenience sampling.

First, we used purposive sampling, which is characterized by researchers being the ones who select the sample based on their expert judgment (Etikan et al. 2016). In this case, all women in the sample were cooperative members, selected based on whether they belonged to the intervention or control group cooperatives (Hejkrík et al. 2022). Secondly, convenience sampling was applied, based on the female coop members' availability within the data collection period, and willingness to participate in the study (Etikan et al. 2016). Formal and informal meetings were arranged to meet with

cooperative members from both groups, who were then offered participation in the evaluation (Hejkrlik et al. 2022).

Of the two mentioned sampling methods, quantitative approaches usually employ convenience sampling technique, while purposive sampling, is applied in qualitative studies (Etikan et al. 2016). Since the evaluation research employed a mixed-method approach, both sampling techniques were used.

4.2. Conceptual Framework

This section is dedicated to the conceptual framework, which is a theoretical foundation for the study methodology, to fulfill the study objectives. It consists of two parts, each corresponding to one of the study objectives. The methodological approach employs a women's empowerment index drawing on Lombardini et al. (2017) and Alkire et al. (2013), which enables us to compare female project and non-project cooperative members' views on their cooperative participation, potential benefits, or possible negative impacts of their involvement in collective action. To fulfill the second objective, determine factors influencing women's active participation in agricultural cooperatives, we apply an adapted framework inspired by Meier zu Selhausen (2016), Kabeer (1999), and Dohmworth & Hanisch (2019), which then allows for testing our hypotheses using a multiple linear regression model.

4.2.1. Women's Empowerment Index in agricultural cooperatives

The multidimensional approach to measuring women's empowerment in agricultural cooperatives, with a solid foundation in current literature in the field, became a conceptual structure for this study. We draw on a study by Lombardini et al. (2017) presenting the process of creation and application of a framework for the measurement of women's empowerment in development interventions. The advantage of this specific framework is its adaptability to the local context and the intervention specifics.

Like many methodological approaches in the field, the authors of the mentioned study follow the concept of women's empowerment introduced by Naila Kabeer (1999) – based on a woman's resources, agency, and achievements.

A similar framework to the one which is employed in this thesis was employed by Beach (2023) who explored the empowerment of women in agricultural cooperatives in the country of Georgia, in her master's thesis. She based her study on a concept applied by Huis et al. (2017) which describes women's empowerment on a micro (beliefs and actions related to the personal realm), mezzo (related to relevant others in the relational sphere), and macro level (related to broader context). In our study, we further develop the approach and apply it to a different type of intervention in a different context of another continent.

We primarily focus on monitoring the changes in factors that substantially affect women's lives in a personal, relational, and environmental dimension (Lombardini et al. 2017). From an extensive range of women's empowerment indicators found within the literature review, we selected 14 indicators, based on the scope of the study, local context, and data availability.

The personal sphere is comprised of a woman's resources such as her knowledge, skills, and the level of or potential for her economic independence (Duguid & Weber 2016; Hao et al. 2018; Fernando et al. 2021), followed by personal autonomy which reflects her agency - an inner ability of a woman to decide for herself, based on her values and previously stated goals (Kabeer 1999; Jejeebhoy & Sathar 2001). As aptly expressed by Nomoto (2017:1), "*to control their own destiny*".

In the relational dimension, we take some of the indicators of the personal dimension (resources, autonomy) and examine how they are reflected in very close (intimate, familial) and broader interpersonal relationships (e.g. in a community). According to the Women's Empowerment in Agriculture Index (Alkire et al. 2013), we explore women's social capital, group and community participation and active involvement (Meier zu Selhausen 2016), leadership and degrees of influencing, household decision-making and control over assets mirroring intra-household gender dynamics (Alkire et al. 2013), contribution to household income, women's economic independence (the level of control of own income), power in markets (bargaining power), and satisfaction with the control of spending their time (Lecoutere 2017; Dohmwirth & Liu 2020).

The environmental sphere, in this study, covers the accessibility of various services within the women's surroundings (Lombardini et al. 2017), adapted to the

context within which the agricultural cooperatives in Zambia operate. Our attention is focused on extension support, financial support of cooperatives, and access to other services, e.g. credit financial services, technical assistance, accessibility of improved inputs, or further training opportunities, provided by state institutions, NGOs operating in the region, or the market (Hejkrlik et al. 2022). Systemic and environmental factors either increase women's opportunities for cooperative participation (and consequently the potential benefits) or hamper it, therefore creating a barrier to the empowerment of female farmers participating in collective action (Huis et al. 2017).

Table 1: Operationalized Women's Empowerment Index

Dimension	Indicator - characteristics	Variable	Resource	
Personal	Potential for economic independence	Potential for economic independence	Jejeebhoy & Sathar (2001), Duguid & Weber (2016) Lecoutere (2017), Fernando et al. (2021), Dohmwirth & Liu (2020), Hao et al. (2017)	
	Opinions on women's economic role	Opinions on women's economic role	Ferguson & Kepe (2011) Majurin (2012) UN Women (2015), Lombardini et al. (2017)	
	Individual knowledge	Trainings-related knowledge	Lecoutere (2017), Duguid & Weber (2016), Majurin (2012), Lombardini et al. (2017)	
	Individual capability	Knowledge application	Veraan (2000), Lombardini et al. (2017)	
	Personal autonomy		Feeling autonomous and independent	Kabeer (1999), Meier zu Selhausen (2016), Lombardini et al. (2017), Beach (2023)
			Free participation in group and community activities	
Relational	Social capital	Personal autonomy in production	Apparao et al. (2019), Lombardini et al. (2017)	
		Trust		
		Social contact increase		
	Group and community participation	Sharing experience	Meier zu Selhausen (2016), Lombardini et al. (2017), Lecoutere (2017)	
		Decision making about a woman's farm in relation to the group		
		Participation in groups		
	Leadership and degrees of influencing in community groups and in the community	Active participation in cooperative	Duguid & Weber (2016), Majurin (2012), Zambia Bureau of Statistics (2023)	
		Active participation in community		
		Extent of involvement in important cooperative decision-making		
		Leadership roles		
Relational	Household decision making (including control over assets)	Speaking in public	Alkire et al. (2013), Lombardini et al. (2017), Arthur-Holmes & Busyia (2020), Jejeebhoy (2000), Meier zu Selhausen (2016), Dohmwirth & Liu (2020)	
		Household decision-making (including control over assets)		
	Contribution to household income	Contribution to household income	Lombardini et al. (2017), Kabeer (1999)	
	Economic independency	Control of own income	Alkire et al. (2013), Jejeebhoy & Sathar (2001), Haley & Marsh (2021)	
	Power in markets	Bargaining power	Hao et. al (2017), Fernando et al. (2021), Meier zu Selhausen (2016)	
		Market-related agency		
	Control of time spending	Control of time spending	Lombardini et al. (2017), UN (1995), Veraan (2000), Alkire et al. (2013)	
Environmental	Accessibility within environment	Extension support	Fernando et al. (2021), Meier zu Selhausen (2016)	
		Financial support of cooperatives		
		Access to services		

The individual factors were chosen from the literature and based on expert estimates. Several variables (e.g. decision-making on whether and whom to marry, whether to have children, etc.) have not been selected for the assessment, given the short length of the intervention (3 years). Based on an estimate by a senior researcher from the evaluation research team it was doubtful to impact strategic life decisions since those are usually taken based on long-term planning and influenced by traditional norms and culture which do not change quickly.

Variables such as attitudes to, opinions on, and experience of gender-based violence, or control over sexuality, presented in Lombardini et al.'s (2017) framework, have not been included in the study for the respondents' as well as the enumerators' protection, given the sensitivity of the information and high risks involved in this type of surveys (People in Need 2022). Furthermore, enumerators were mostly men, which could have influenced the results and created bias (Lombardini et al. 2017). Female political participation and views were not explored either, because the data collection was planned close to the date of the Zambian general elections held in August 2021. Asking questions about politics could have been interpreted as an attempt to influence the election, which we wanted to avoid for security reasons.

4.2.2. Determinants of Farmers' Active Participation in Agricultural Cooperatives

Mere membership in a cooperative is not sufficient to enhance women's empowerment. Women need the opportunity and must have the will and the motivation to participate actively since more active involvement can increase the benefits acquired through collective action (Dohmwirth & Hanisch 2019).

4.2.2.1. Conceptualizing Active Participation

Based on Meier zu Selhausen (2016), whose study of a western Ugandan cooperative serves as an inspiration for this part of the conceptual framework, we operationalize active participation using more components.

The first component of the measure of active involvement is the share of produce that women sell through the cooperative marketing channels (and not, for example, to

middlemen). The more the woman sells to the cooperative, the higher the intensity of her participation (Meier zu Selhausen 2016; Beach 2023).

The second component is the degree of women's involvement in important decision-making of the group, which shapes the cooperative future direction and contributes to higher gender inclusion in the future (Gender Division 2023). Greater involvement in decision-making reflects a woman's agency (Kabeer 1999) and an increased voice when they participate in the democratic process (Eyben et al. 2008). It is a subjective measure, which involves control for voting for cooperative leadership (Beach 2023).

The third measure of women's involvement is a self-assessment of how active she considers herself to be (e.g. how active she is in discussions, in proposing new topics...), if she attends all cooperative meetings, and whether she is willing to dedicate her time to cooperative meetings and other activities. This measure is fully subjective (Ferguson & Kepe 2011; Beach 2023).

4.2.2.2. Factors Influencing Active Participation

In the process of selecting possible factors that affect women's active involvement in cooperatives, we applied an adapted framework inspired by Meier zu Selhausen's (2016) conceptual framework, which he applied in a study focused on determinants of female cooperative membership and active participation in collective action. Similarly to his concept, in our study, we examine whether and to what extent women's characteristics, their access to resources, their agency (and its use in intra-household power dynamics), and an institutional environment (Kabeer 1999; Meier zu Selhausen 2016; Dohmwirth & Hanisch 2019), influence the intensity of their participation in collective action. Following Meier zu Selhausen's (2016) framework, we also involved prior experience in collective action.

Table 2: Potential Determinants of Active Participation – Sorted by Framework Category

Factors	Framework category	Resources
Age (X ₁)	Member characteristic	Agarwal (2010)
Education (X ₂)	Access to resources	Meier zu Selhausen (2016)
Household size (X ₃)	Member characteristic	Meier zu Selhausen (2016)
Years of coop membership (X ₄)	Prior experience in collective action	Meier zu Selhausen (2016)
Total land holding (X ₅)	Access to resources	Meier zu Selhausen (2016)
Full control of own income (X ₆)	Agency, intra-hh power relations	Kabeer (1999), Meier zu Selhausen (2016)
Free participation in groups and community (X ₇)	Agency (decision-making about own activities)	Kabeer (1999)
Household decision-making (X ₈)	Agency, intra-hh power relations	Meier zu Selhausen (2016), Kabeer (1999)
Accessed credit in the last 3 years (X ₉)	Access to resources	Meier zu Selhausen (2016)
Accessed input subsidy in the last 3 years (X ₁₀)	Institutional environment	Dohmwirth & Hanisch (2019)
Financial support for coops from government or NGOs (X ₁₁)	Institutional environment	Dohmwirth & Hanisch (2019)
Sufficient extension support from the government or NGOs (X ₁₂)	Institutional environment	Dohmwirth & Hanisch (2019)

The first three variables (potential determinants of active participation) are demographic and provide basic data: age (X₁), educational level (never been to school, primary, secondary, tertiary) (X₂), and household size (X₃) (Meier zu Selhausen 2016; Beach 2023). Years of cooperative membership (X₄) present previous experience in collective action (Meier zu Selhausen 2016). Total land holding (X₅) stands for access to land and its ownership, a resource with the potential to increase farmer's income, if properly utilized (Meier zu Selhausen 2016).

Control of own income (X₆) is one of the signs of increasing economic independence. It enables women to spend money on what they value, enhancing their economic empowerment (Alkire et al. 2013; Laszlo et al. 2017; Haley & Marsh 2021). Freedom to participate in collective action (X₇) and household decision-making (X₈) reflect personal autonomy, and power dynamics at home. The three variables (X₆, X₇, and X₈) represent women's agency (Kabeer 1999; Meier zu Selhausen 2016; Dohmwirth & Liu 2020).

Access to credit (X₉) presents potential for economic independence and, at the same time can be considered an external service (Jejeebhoy & Sathar 2001; Duguid &

Weber 2016). Access to subsidized inputs (X_{10}), sufficient financial (X_{11}), and extension support to cooperatives (X_{12}), either by the government or an NGO, mirror the institutional environment and external service providers who possibly facilitate cooperatives operation (Dohmwirth & Hanisch 2019).

4.3. Data Collection

The data collection which took place within the final evaluation assessment of the project intervention was coordinated by the NGO implementor and supervised by the research team from the Czech University of Life Sciences in Prague. It consisted of a collection of quantitative and qualitative data in the 5 districts – Mongu, Limulunga, Kaoma, Nkeyema, and Mumbwa. The data collection took place from October to November 2021.

Quantitative data was collected by the NGO district agricultural field officers and 30 trained enumerators who assisted in the data collection. The application Kobo toolbox was used on the data collectors' smartphones, to facilitate the process. Data was recorded in the Kobo toolbox app in English; however, the enumerators spoke local languages, therefore, they were able to collect data also from respondents with no English language knowledge. The data was obtained altogether from 539 cooperative members, among them 290 members of the intervention cooperatives and 249 members of non-intervention (control) cooperatives. For most calculations in this study, we employ a female-only sample which covers 319 female cooperative members and consists of 172 women members of supported cooperatives and 147 from control cooperatives. Some results are supported by comparison with descriptive statistics on male respondents.

The final assessment questionnaire consisted of 177 questions concerning the analysis of cooperatives (Appendix 2). From them, 83 questions were used in this study. The complete structured questionnaire consisted of questions on demographic and social factors, members' perceptions of fulfilling cooperative principles, factors such as cooperative social capital, the intensity of involvement, economic and non-economic aspects of production, market access, cooperative operation, and perception of services provided externally (training, extension, input subsidy, et) (Hejkrlik et al. 2022). Members' views were measured using a 5-point Likert (1932) scale (5 – “strongly agree”,

4 – “partly agree”, 3 – “neither agree nor disagree”, 2 – “partly disagree”, 1 – “strongly disagree”). Other variables were binary (1 – “yes”, 0 – “no”).

Qualitative data collection was conducted by experts from the Czech University of Life Sciences in Prague. Direct cooperative visits of 9 cooperatives stimulated by the intervention were conducted, involving observation, guided transect walks, and business plan discussion. A total of 9 mixed-gender focus group discussions were conducted with the cooperative members, discussing 13 questions, and 6 personal semi-structured interviews each with one or two board members of the respective cooperative (10 board members from 6 cooperatives), to obtain in-depth information for a better understanding of the results obtained through quantitative methods and for the final classification of cooperatives (Hejkrlik et al. 2020). The FGDs and interviews were conducted in English, and the agricultural field officers translated, where it was necessary.

4.4. Data Analysis

After the data was exported from the application Kobo toolbox, it was cleaned up and coded using MS Excel 365. Then it was analyzed, starting with descriptive statistics, in IBM SPSS, version 29. Stata, the 2016 version was used for the Ordinary Least Square Method employed in the multiple regression model.

4.4.1. Women’s Empowerment Index

We used the non-parametric Mann-Whitney U test to determine whether there were statistically significant differences between the female agricultural cooperative members supported by the intervention and the members of control cooperatives.

The selected 14 indicators described in the conceptual framework (Appendix 1) comprise together 26 variables, each of which is measured based on the answers to 1-9 questions (the number differs for each variable). A total of 68 questions were used in the design of the women’s empowerment index model. A table that displays the employed framework with all the questions, variables, indicators, and dimensions of women’s empowerment and an explanation of how these relate to women’s empowerment.

In the personal dimension, we examine the following variables: potential for economic independence, opinions on a woman’s economic role, training-related

knowledge, knowledge application (capability), feelings of autonomy and independence, decision-making about activities performed, and personal autonomy in production.

In the relational sphere, the variables explored are trust, an increase of social contact, sharing experience, decision-making about a woman's farm from the perspective of social capital, participation in groups, active participation in cooperative, active participation in a community, the extent of involvement in important cooperative decision-making, leadership roles, speaking in public, household decision-making (which also involves decision-making about assets), contribution to household income, control of own income, bargaining power, market-related agency, and satisfaction with own control of time spending.

The environmental dimension, in this study, covers accessibility of various services within the woman's environment included in 3 variables: extension support, accessibility to the financial support of cooperatives, and access to other services (technical assistance, accessibility of inputs, further training opportunities, etc.).

4.4.2. Determinants of Farmers' Active Participation in Agricultural Cooperatives

To achieve the second study objective, to examine factors influencing women farmers' active participation in agricultural cooperatives, we employed multiple regression analysis, exploring the intensity of farmers' participation, which is a dependent variable (made of three components described below) and 12 independent variables selected from recent studies that also focused on the intensity of participation in agricultural cooperatives, such as Meier zu Selhausen (2016), or Dohmwirth & Hanisch (2019).

The intensity of women's active participation in agricultural cooperatives (=the dependent variable Y) is measured by the following categorical variables:

- (1) Percentage of production sold through the cooperative, measured with a 5-point Likert scale 5-1 (80-100%, 60-79%, 40-59%, 20-39%, 0-19%). The more they sell to the cooperative, the more active they are.
- (2) Involvement in making important decisions in the cooperative to a large extent. Measured with a 5-point Likert scale (5-1), where 5 stands for "strongly agree"

and 1 means “strongly disagree”. In this case, we used a control for voting for cooperative leadership (when a woman considered herself largely involved in important decision-making but was not involved in voting for cooperative leadership, the positive answer to the first question is translated into a negative one).

(3) Self-assessment of own involvement within the cooperative (5-1)

- Considering herself an active member of the cooperative (e.g. discussion, proposing new topics...) (5-point Likert scale)
- Attending all cooperative meetings (5-point Likert scale)
- Willing to dedicate her time to the cooperative (5-point Likert scale)

The independent variables involve categorical variables such as age (X_1), years of cooperative membership (X_4), household size (X_3), and total land holding (X_5). Among categorical variables, the following were employed: educational level (X_2) with possible answers coded as “she has never been to school” = 1, “primary” = 2, “secondary” = 3, and “tertiary education completed” = 4. Household decision-making (X_8) was coded as follows: “she makes decisions herself” = 1, “she decides jointly with someone else” = 1, and “someone else makes the decision” = 0. Credit (X_9), and subsidized inputs (X_{10}) accessed in the last 3 years, were binary variables, coded: 1 = yes, 0 = no. From variables that were measured by a 5-point Likert scale from the highest value 5 – “strongly agree” to the lowest 1 – “strongly disagree,” we explored the control of a woman’s income (X_6), freedom to participate in collective action (X_7), sufficient financial (X_{11}), and extension support (X_{12}).

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \varepsilon$$

This equation represents a basic multiple linear regression model where the dependent variable Y_i is regressed on three independent variables X_{1i} , X_{2i} , and X_{3i} , along with an intercept term β_0 and error term ε_i . The coefficients β_1 , β_2 , and β_3 represent the effect of each independent variable on the dependent variable (coefficients), holding other variables constant.

5. Results

In this section, we present the findings of the study acquired through data analysis, for which we employed statistical methods, specifically the Mann-Whitney U test to compare two independent groups of female cooperative members, and multiple regression analysis to determine factors influencing women's active participation in collective action. Data were obtained from the final evaluation assessment of a development intervention implemented in Western and Central provinces of Zambia, which aimed at improving the agricultural productivity of targeted cooperatives, building their capacity to operate profitably, and facilitating their market access.

Our study sample consists of 319 female cooperative members. Of them, 172 belong to the cooperatives supported by the intervention, and 147 to the comparison group. The most frequently attained educational level of all respondents was primary education (58%), followed by secondary (31%), those who have never been to school (8%), and a small portion of graduates of tertiary education (4%). Married respondents accounted for 44%, single and widowed women, each for 24%. Six percent were divorced and one percent cohabiting with their partner. From the group of female respondents, 65% percent were household heads. The average respondents' household size was 6 members, on average 3 adults per household, 2 of them females. Almost 60% participated in farming only, 41% of women in addition performed an off-farm job. Income from farming was a major source of livelihood in 82% of cases, the rest 18% probably had other substantial income sources. An average respondent spent 15 years in the farming sector. Sixty-two percent of survey participants have not accessed credit within the last three years.

Table 3: Descriptive Statistics - Categorical Variables

	Answers	Project N (% of total)	Non-project N (% of total)	Total N (% of total)
Education	Never been to school	19 (5.96)	5 (1.57)	24 (7.52)
	Primary	94 (29.47)	91 (28.53)	185 (57.99)
	Secondary	51 (15.99)	47 (14.73)	98 (30.72)
	Tertiary	8 (2.51)	4 (1.25)	12 (3.76)
Family status	Married	79 (24.76)	61 (19.12)	140 (43.89)
	Cohabiting	2 (0.63)	1 (0.31)	3 (0.94)
	Divorced	10 (3.13)	10 (3.13)	20 (6.27)
	Single	36 (11.29)	42 (13.17)	78 (24.45)
	Widowed	45 (14.11)	33 (10.34)	78 (24.45)
Off-farm job	No	98 (30.72)	91 (28.53)	189 (59.25)
	Yes	74 (23.2)	56 (17.55)	130 (40.75)
Accessed credit in the last 3 years	No	108 (33.86)	89 (27.9)	197 (61.76)
	Yes	64 (20.06)	58 (18.18)	122 (38.24)
Accessed input subsidy in the last 3 years	No	70 (21.94)	78 (24.45)	148 (46.39)
	Yes	102 (31.97)	69 (21.63)	171 (53.61)
Farming is a main income source	No	30 (9.4)	26 (8.15)	56 (17.55)
	Yes	142 (44.51)	121 (37.93)	263 (82.45)
Household head	No	64 (20.06)	49 (15.36)	113 (35.42)
	Yes	108 (33.86)	98 (30.72)	206 (64.58)

The average age of intervention cooperative respondents was 51.55 years, which is significantly higher than the average age of respondents from the control group, being 46.82 years (mean difference was 4.73 years, $p=0.004$, *** significance level). The average length of cooperative membership was 6.59 years for respondents from the project cooperatives, resp. 5.29 from non-project members (mean difference was 1.3 years, $p=0.007$, *** significance level). The total land area owned by respondents from the project group was 3.28 ha, slightly higher than the non-project respondents' land size which was at 2.9 ha (mean difference 0.38 ha, $p=0.046$, ** significance level). On average, more intervention cooperative members (0.59) accessed input subsidy in the last 3 years, than the non-intervention group of respondents (0.47). It was measured on a scale from 0 to 1 where one means "yes, I have accessed input subsidy," and 0 means "no, I have not accessed it". The results showed a statistically significant difference (mean diff. 0.12, $p=0.028$, ** significance level). Other factors explored have not shown any statistically significant differences between the two groups under the study.

Table 4: Group Statistics – Comparison of Project and Control Cooperative Members

Group statistics	Project cooperative members	Control cooperative members	Mean Diff.	P-value	Sig.
	Mean (Std. Dev)	Mean (Std. Dev)			
Age (years)	51.55 (14.86)	46.82 (14.58)	4.73	0.004	***
Household size (n)	6.56 (3.46)	6.28 (2.2)	0.28	0.997	
Co-op membership (years)	6.59 (4.92)	5.29 (4.28)	1.3	0.007	***
Years in farming sector	15.22 (11.91)	15.44 (10.36)	-0.22	0.377	
Total land area (ha)	3.28 (3.76)	2.9 (5.08)	0.38	0.046	**
Number of adults in a household	3.2 (1.74)	3.06 (1.5)	0.14	0.55	
Number of female adults	1.98 (1.23)	1.88 (1.07)	0.1	0.803	
Education	1.28 (0.72)	1.34 (0.59)	-0.06	0.412	
Family status	2.8 (1.76)	2.9 (1.69)	-0.1	0.777	
Off-farm job	0.43 (0.5)	0.38 (0.49)	0.05	0.373	
Accessed input subsidy in the last 3 years	0.59 (0.49)	0.47 (0.5)	0.12	0.028	**
Accessed credit in the last 3 years	0.37 (0.49)	0.39 (0.5)	-0.02	0.681	
Farming is a main income source	0.83 (0.38)	0.82 (0.38)	0.01	0.954	
Household head	0.63 (0.49)	0.67 (0.47)	-0.04	0.471	

5.1. Women’s Empowerment Index in Agricultural Cooperatives

In this sub-chapter, we explore the results of a comparison of women’s empowerment measured using the women's empowerment index, components of which are divided among the personal, relational, and environmental dimensions of a woman's life. Table 5 below displays the results for variables where the differences between the project and control cooperative members have been found statistically significant. A table involving all the variables can be found in the Appendices section, as Appendix 2.

Table 5: Results of Women's Empowerment Index – Comparison of Project and Control Cooperative Members (variables with significant differences between groups)

Dimension	Indicator	Variable	Project (N=172)	Control (N=147)	Mann Whitney	
			Mean (SD)	Mean (SD)	P-value	Sig.
Personal	Potential for economic independence	Potential for economic independence	3.37 (1.11)	2.95 (1.26)	0.002	***
	Individual knowledge	Trainings-related knowledge	4.4 (0.75)	4.12 (0.99)	0.029	**
	Individual capability	Knowledge application	4.31 (0.86)	3.95 (1.13)	0.018	**
	Personal autonomy	Feeling autonomous and independent	3.94 (1.77)	2.9 (2.37)	0.002	***
Relational	Social capital	Social contact increase	4.37 (0.76)	4.04 (1.12)	0.048	**
	Group and community participation	Participation in groups	1.94 (0.87)	1.74 (0.82)	0.035	**
		Active participation in cooperative	4.19 (0.42)	4.04 (0.48)	0.006	***
	Power in markets	Bargaining power	3.33 (2.19)	2.55 (2.32)	0.005	***
	Control of time spending	Control of time spending	4.53 (0.7)	4.67 (0.56)	0.079	*
Environmental	Accessibility within environment	Extension support	3.96 (1.2)	3.09 (1.75)	<.001	***
		Financial support of cooperatives	4.03 (1.13)	2.98 (1.71)	<.001	***
		Access to services	3.77 (1.17)	3.15 (1.52)	<.001	***

Results of Mann-Whitney U-test; *** p<.01, ** p<.05, *p<.1

In the personal dimension, the results showed a significantly higher potential for economic independence (p=0.002) was found in members of intervention cooperatives. It means, that on average, the ability of women to receive higher prices for products compared to the situation three years back, their access to higher quality inputs at a lower price, more secure and stable sales, less time dedicated to marketing, reduced cost of production, better access to credit and increased income due to their cooperative

membership in the last three years, slightly improved in case of the intervention cooperative members, with the mean value of 3.37 (SD= 1.11). In comparison, members of control cooperatives (M= 2.95, SD= 1.26) on average, do not agree with statements that their situation improved due to cooperative membership. Rather they show a mild disagreement.

An individual trainings-related knowledge, which shows the level of awareness of sustainable agricultural practices, an increase in the knowledge of SAPs within the last 3 years, and familiarity with the benefits of agricultural diversification, on average, improved for both examined groups, with a significant difference between them ($p= 0.029$). The mean value of 4.4 (SD= 0.75), indicated by project cooperative respondents shows stronger agreement with the improvement than was for non-project respondents where the mean value is 4.12 (SD= 0.99).

In the case of individual capability, which assesses the practical application of training-related knowledge (capacity to use technology in production, processing, and adoption of sustainable agricultural practices on a woman's total farm size), the results are again affirmative for both groups' cases, they evince the positive perception of the role of training for acquisition of important agricultural skills. At the same time, the difference between the two groups shows statistical significance ($p= 0.018$). The mean value of responses of members from the stimulated cooperatives is 4.31 (SD= 0.86), and it is lower for respondents from non-stimulated coops, at 3.95 (SD= 1.13). Therefore, based on the results of the survey, the respondents who participated in the intervention, feel more confident in the adoption of technologies and sustainable environmental practices.

The results revealed a highly significant ($p= 0.002$) difference in women's statements about increased feelings of autonomy and independence due to their participation in collective action. The mean value of project members' responses was 3.94 (SD=1.77), which stands for partial agreement, in contrast to the value of 2.9 (SD=2.37) responses of non-project survey participants, which is closer to the answer "neither agree nor disagree".

No statistically significant differences between the project and non-project groups were found in the following variables from the personal dimension of empowerment. In the case of opinions on women's economic roles, mean values were 4.12, and 4.08,

respectively. The results suggest that on average, women agree with the statements that women members can enrich cooperative performance, that it is crucial to have women board members, that they can do their job as well as men can, and that they should be involved in other activities (e.g. cooperative participation), not only in caregiving and performing household responsibilities. The results also revealed a common occurrence of free participation in groups and community activities for both intervention and non-intervention cooperative members. Most women agree that they can freely participate in different community activities, cooperatives, and other groups. The mean value is 4.74, resp. 4.66 for the control group. Both groups of respondents also indicated high personal autonomy in farming – the responses suggest that the women decide about their agricultural production, inputs to buy, and crops to grow, based on what they think is the right thing to do. The mean value is 0.91, resp. 0.94 for non-intervention cooperatives.

In the relational dimension of empowerment, some of the variables showed statistically significant differences between the two groups of female cooperative members. Moreover, in the case of variables with non-significant differences, the majority of results suggest that positive change, compared to the situation at the beginning of the project (three years before the end-line data collection), occurred in both examined groups of respondents.

Regarding the perception of increased social contact with other cooperative members in the last 3 years, the results evince positive change, with statistical differences between the two groups under research ($p=0.048$). Intervention participants' mean response value is 4.37 (SD= 0.76), for women from non-intervention cooperatives, it is 4.04 (SD= 1.12).

The variable of participation in various community groups stands for involvement in other associations and organizations than cooperatives (e.g. microfinance, women or religious groups, trade associations, local government, etc.). The project respondents' results indicated a mean value of 1.94 (SD= 0.87), and the non-project members' mean value of responses was 1.74 (SD= 0.82). The results prove a statistically significant difference ($p=0.035$).

Women farmers' active participation in cooperatives is composed of the amount of production sold to the cooperative, a woman's attendance in cooperative meetings, willingness to dedicate her time to the cooperative, and considering herself an active

member. Based on the survey results, there is a significant difference ($p= 0.006$) between the two groups assessed, again, higher for respondents from the intervention cooperatives, with a mean value of 4.19 (SD= 0.42), compared to 4.04 (SD= 0.48) non-intervention cooperative members.

The comparison assessment of statements by members of project cooperatives and non-project research participants showed a statistically significant difference ($p= 0.005$) in the perception of the evolvement of women's bargaining power, whether it improved in the last three years. The project members' mean response value was 3.33 (SD= 2.19), suggesting mild agreement, in contrast to a lower value of 2.55 (SD= 2.32), for non-project members, tilting towards slight disagreement.

Satisfaction with the level of control of spending own time is the first variable indicating significant differences between the two groups of respondents ($p=0.079$), which simultaneously show more positive results indicated by the control group respondents. The mean value is 4.67 (SD= 0.56), compared to 4.53 (SD= 0.7) witnessed by the intervention respondents.

Trust among cooperative members, in comparison to the situation 3 years back, was perceived as increased. The responses were similar for both groups of the survey participants, with the mean value of 4.22, resp. 4.23. Results for the variable of women farmers' opportunities to mutually share their experience with other farmers, also suggest positive change. The average response of project and non-project members was 4.4, and 4.14, respectively.

Active participation in the community and working with other farmers outside of the cooperative, based on the results of the questionnaire, increased. The responses by both groups are tilting towards a strong agreement, with average values of 4.72 for the project, and 4.59 for the non-project study participants.

The self-assessment of the extent of involvement in group and community decision-making, and influencing important decisions, showed women's positive perception of their participation in this regard. The mean response values of intervention and non-intervention members were 4.09, resp. 4.02.

The share of women performing leadership positions in cooperatives (member of the board, chairman) was found to be 15% for the project, resp. 14% for female farmers

from the control group coops. Of leadership positions by both males and females in the cooperatives under the survey, from our sample, 42% were performed by women and 58% by men in the case of the intervention group. Within the control group, there were 44.4% female leaders and 55.6% male leaders. Despite the fact, that in both project and non-project groups of cooperative members, the ratio of women members is 59%, while male members share is 41%.

Most women feel comfortable speaking up in public to help decide on community matters or intervene in a family dispute at home. The mean values of responses were 4.63 for the supported cooperative members resp. 4.66 for the comparison group.

The variable of household decision-making involved questions about the crops harvested that should be kept home for consumption, decision-making about spending money made from the sale of crops, money made from other activities where the woman is mainly contributing, decisions about what food to buy and consume, whether to take a small loan, from what source and how much to borrow, about purchasing and selling livestock, purchasing plots of land and decisions about the education of the women's children. The results suggest that 78% of the project, respectively 79% of non-project women participating in the survey take part in making those decisions, either themselves or jointly with someone. In cases when they do not decide, they can partly influence others' decisions, with the mean value of 3.8, resp. 3.96 for the non-intervention coop members.

The average contribution of female cooperative members to household income is 63.78%, and 64% of males' earnings. For the non-intervention group, the contribution is 69.3% of the income of females and 68.87% of male respondents.

The level of control of women farmers' income and the independence of their spouses' income due to cooperative membership, is assessed positively by both female groups. The average response values are 4.49, resp. 4.5.

The market-related agency which reflects an increase in the number of business contracts within the intervention duration period was perceived as rather neutral, with the mean values of 3.26 by women from the stimulated coops, resp. 3.08 by female members from the comparison group cooperatives.

Through analysis of variables in the environmental sphere of women's empowerment, we discovered differences between supported and non-supported cooperative members. They were highly statistically significant in the case of all three variables including extension support, financial support of cooperatives, and access to services ($p = <.001$). The results were in favour of the project intervention.

Female respondents from the project cooperatives partially agreed that there has been sufficient extension support from the government and NGOs and that the service from extension agents improved within the last 3 years, with a mean value of 3.96 (SD= 1.2), non-project members perceived the service improvement as rather neutral, with a mean response value of 3.09 (SD= 1.75). The difference was highly significant ($p = <.001$).

Similar was the perception of financial support for cooperatives by the two groups. The mean value of responses of the intervention participants was 4.03 (SD= 1.13), compared to 2.98 (SD= 1.71) indicated by the control group. High statistical significance has been found ($p = <.001$). The contrast in responses in this specific case was probably affected directly by the project since one of the benefits of the intervention was a financial grant (ranging from 25,000 ZMW to 48,000 ZMW) provided to each of the cooperatives participating in the project to realize their business plans.

Improvement of service accessibility, concretely processing and storing farmers' production, services from input suppliers, improved access to relevant market information, information about good agricultural practices, and an increased opportunity for training, were evaluated as higher by the members of supported cooperatives, with a mean value of 3.77 (SD= 1.17). Members of the control group indicated a mean response value of 3.15 (SD= 1.52).

5.2. Determinants of Farmers' Active Participation in Agricultural Cooperatives

The intensity of women's active participation (a dependent variable Y) consisted of three categorical variables: the percentage of production sold through the cooperative, the extent of women's involvement in making important decisions in the cooperative (with control for voting for cooperative leadership), and self-assessment of own activity

(like considering herself an active member, attending cooperative meetings, and willingness to dedicate time to the cooperative).

The results described in the sub-chapter “5.1 Women’s Empowerment Index in Agricultural Cooperatives,” showed that female farmers from cooperatives supported by the project intervention were slightly more active, compared to the control group cooperative members. However, most members did not sell their products to the cooperative. The average amount sold to the coop was 36.5% for female members of supported cooperatives, resp. 26.4% for comparison group cooperative members.

Exploring factors that would significantly influence our dependent variable, the intensity of women’s active participation (Y), we employed multiple linear regression, and based on our conceptual framework, tested the following independent variables: age (X₁), educational level (X₂), household size (X₃), total land holding (X₅), household decision-making (X₈), full control of own income (X₆), credit (X₉) and input subsidy (X₁₀) accessed in the last 3 years, the duration of cooperative membership (X₄), freedom to participate in collective action and community activities (X₇), financial (X₁₁), and extension support of cooperatives (X₁₂). In this case, women respondents from both the intervention and the control cooperatives were examined as one group.

Table 6: Determinants of Women's Active Participation in Cooperatives

Factors	Framework category	Resources	Coef.	St. Err.	p-value	Sig.
Age (X ₁)	Member characteristic	Agarwal (2010)	0.002	0.002	0.357	
Education (X ₂)	Access to resources	Meier zu Selhausen (2016)	0.056	0.04	0.16	
Household size (X ₃)	Member characteristic	Meier zu Selhausen (2016)	0.008	0.011	0.458	
Years of coop membership (X ₄)	Prior experience in collective action	Meier zu Selhausen (2016)	0.009	0.006	0.162	
Total land holding (X ₅)	Access to resources	Meier zu Selhausen (2016)	0	0.006	0.965	
Full control of own income (X ₆)	Agency, intra-hh power relations	Kabeer (1999), Meier zu Selhausen (2016)	0.161	0.053	0.002	***
Free participation in groups and community (X ₇)	Agency (decision-making about own activities)	Kabeer (1999)	0.143	0.04	0	***
Household decision-making (X ₈)	Agency, intra-hh power relations	Kabeer (1999), Meier zu Selhausen (2016)	0.08	0.072	0.265	
Accessed credit in the last 3 years (X ₉)	Access to resources	Meier zu Selhausen (2016)	0.057	0.055	0.3	
Accessed input subsidy in the last 3 years (X ₁₀)	Institutional environment	Dohmwirth & Hanisch (2019)	-0.039	0.055	0.475	
Financial support for coops from government/NGOs (X ₁₁)	Institutional environment	Dohmwirth & Hanisch (2019)	0.003	0.023	0.896	
Sufficient extension support from government/ NGOs (X ₁₂)	Institutional environment	Dohmwirth & Hanisch (2019)	0.046	0.023	0.046	**
Constant			2.218	0.314	0	***
Mean dependent var	4.124	SD dependent var				0.456
R-squared	0.175	Number of obs				319
F-test	2.591	Prob > F				0
Akaike crit. (AIC)	392.613	Bayesian crit. (BIC)				486.7

Results of MLR model

*** p<.01, ** p<.05, *p<.1

Results revealed three statistically significant determinants (independent variables X_n) that slightly influenced the dependent variable (Y), the intensity of women's active participation in agricultural cooperatives under the study: Full control of women's income (X₆) (p= 0.002, coefficient 0.161, free participation in groups and community (X₇) (p= 0, coefficient 0.143), and sufficient extension support for cooperatives (X₁₂) (p= 0.046, coefficient 0.046).

However, the correlation coefficients are low, which signifies the low magnitude of the model. The R-squared value of 0.175 shows that the independent variables included in the model can explain the dependent variable, from 17.5 percent. This rather low value of R-squared means that there must be other factors that have not been involved in the proposed model, that significantly influenced the intensity of women's participation in agricultural cooperatives under the study.

6. Discussion

The results of this research allow looking at agricultural cooperatives in Western and Central Zambia from the perspectives of their female members. The study focuses on the potential of these cooperatives to positively affect women's empowerment via their participation in this kind of collective action. Empowerment is viewed through a three-dimensional lens, and we look closer at areas in which it manifests itself: the personal, relational, and environmental spheres of a woman's life. In the previous chapter, we presented the empirical evidence. In this section, we discuss our findings with academic literature in the field and suggest interpretations of the results, supported by quotes from the respondents, female and male members of 9 intervention cooperatives, who participated in focus group discussions within the final assessment of the project.

6.1. Women's Empowerment Index in Agricultural Cooperatives

As described in the results, statistically significant differences between female members of the intervention-supported and control-group cooperatives were found in the case of 12 out of 26 variables under 9 indicators examined through the women's empowerment index. Findings showed significantly higher mean values of responses of the intervention participants. This occurred in all cases except for the variable of control of spending own time, which was slightly higher for non-project cooperatives.

In general, female members from stimulated cooperatives perceived individual aspects of women's empowerment, regarding collective action, cooperative functioning, and performance, rather positively, and assessed their membership in cooperatives as contributing to the desired change. Cooperative members from the control group, in contrast, took a more neutral position in several cases of the assessment.

In the personal dimension, we have found significant differences between the project and non-project cooperatives in women's potential for economic independence, individual knowledge, individual capability, and personal autonomy. In the relational dimension, the differences were found in social capital, group participation, power in markets, and control of time spending. And in the environmental sphere, it was the accessibility within the environment – access to services and external support of cooperatives.

Economic benefits

From the range of hypothetical economic benefits of cooperative participation that appeared in academic literature, the results of this study show a mildly improved potential for economic independence and similarly mildly increased power in markets, experienced by the members of project cooperatives. These findings contrast with the perceptions of the control group cooperative members, who did not report a positive change in either of these variables, rather they expressed a neutral opinion. The differences between the project and non-project respondents were highly statistically significant. The reported improvement, although mild, is in line with the current body of literature, as follows.

The economic benefits of participation in agricultural cooperatives in developing countries are the most frequently expected ones (Ferguson & Kepe 2011). There is ample evidence showing that these expectations are justified. Bizikova et al. (2020), in an extensive literature review of farmers' organizations (FOs) and their contributions to smallholder farmers' development, reviewed 239 studies from 23 countries in Sub-Saharan Africa, and India. The authors found that improved income was reported in 57% of the case studies, while only 15% informed about no income improvement. The farmers' organizations also provided various services to their members, with the most common being collective marketing to facilitate farmers' product sales (54%), increasing access to market information, for example on prices (46%), extension services, and education aiming at improving farmers' production and expanding their business knowledge (37%).

Findings of our study on services accessible through cooperatives, and members' perceptions about the sufficiency of extension and financial support from external agents, revealed highly significant differences between the two groups of project and non-project respondents. On average, the project cooperative members tend to agree with the adequacy of support and improvement in service accessibility, in contrast to the non-project group of respondents, who responded rather neutrally.

More information on the perceptions of service provision by the project cooperative members was obtained from the focus group discussions. When we asked the respondents about the accessibility to inputs within the Farmer Input Support Programme, most cooperatives shared an experience that members were registered (at least part of them), however, the support did not function as it was supposed to. Lower obtained amounts of inputs than promised to them and the problematic registration of new program

members were often reported. Farmers from a coop in Mumbwa told us: *“We can access subsidized inputs, but there is not enough for everyone. Only half of us [the members] officially receive FISP support. Others get nothing although they would like to,”* and explained that even though the rest of them applied for support in 2016 and had been promised that their turn would come in 2019 when beneficiaries in the program should have changed, nothing had changed until October 2021, the time of data collection. Members from a cooperative in Nkeyema, added: *“Only those who come first are served.”* Other cooperatives reported they pooled the received inputs together. For example, members from a cooperative we visited in Mumbwa: *“The distribution doesn’t work as it should. Those who get inputs share them with others so in the end, everyone gets an equal portion.”* Farmers from Kaoma told us they faced a similar challenge but found another solution working for them: *“When we pool the government vouchers together and the chairman collects inputs for all of us, we get more.”* The described experiences suggest shortcomings in the FISP management by the government.

Here, it should be added that the data comes from October to November 2021, i.e. the beginning of the term of office of the new government. After the administration changed, the main FISP strategy remained the same, however, according to the Ministry of Agriculture (2023), improving the program’s targeting to provide support to the neediest beneficiaries and ensure fairness in input distribution, became one of the government priorities in the field of agricultural programming to assist small-scale farmers. An electronic agro-input system has been put in place, and in the season 2023/24, launched in two more provinces – in addition to last year’s pilot regions of Lusaka and Central Province, the e-voucher system is currently being implemented in Southern and North-Western Provinces (Ministry of Agriculture et al. 2023).

Qualitative evidence suggests that some of the supported cooperatives started using Lima Links, a private service that provides information on market prices in nearby markets in the form of SMS. Project cooperative members received training on the potential benefits of such services and learned how to employ them in marketing. This service was provided to project farmers free of charge, within pilot testing of the platform. A female cooperative member from Mongu district said: *“We use Lima Links on an individual level (of production). It is very helpful and free of charge. We appreciate it is in the form of SMS. Applications are a challenge because smartphones are expensive.”*

Among farmers from a cooperative in Limulunga, the Lima Links platform is known, however, its usage is limited. *“We have a bad network and only solar panels as a source of power, so using the service is more problematic.”* Farmers from Kaoma add their experience: *“We received the training on Lima Links, but we don’t use it. We are close to the market, and it is easier to sell our produce to middlemen here. We have no means of transport to take it somewhere else.”*

Both (project and control) groups of respondents reported a neutral impact of cooperative participation on their market-related agency which was measured as an increase in the number of business contracts within the intervention duration period.

Here, it must be mentioned that the implementation of the development project intervention has been affected by the COVID-19 pandemic. Not all planned activities could have been carried out, the delivery of project activities was often delayed or canceled due to restrictions. Monitoring and evaluation, in some cases, were postponed as well. At the time of our data collection, little research was available on the impacts on women in cooperatives. A study by Hiriya & Chettri (2020) examining farmers associated with the SEWA Cooperative Federation in India, was an exception. The Indian restrictions applied during the pandemic were one of the most stringent in the world. Besides affecting the population’s health, COVID-19 had severe economic impacts – the movement of goods and persons was restricted, most businesses had to stop operating, which disrupted value chains, and social restrictions were put in place. Families, dependent on unstable informal employment, or with no work at all, became even more economically fragile, the situation often led to income reduction or loss, resulting in food insecurity and serious struggles. Besides the negative impacts of the crisis, the authors aimed to focus on cooperatives as potential coping strategies, that could alleviate it. We applied a similar approach in our efforts to find out how the pandemic affected cooperative members, and how it could potentially reduce benefits acquired from the intervention. We decided to ask participants in the focus group discussions.

Similar conditions to those experienced by Hiriya & Chettri’s (2020) respondents, were lived by members in our surveyed cooperatives. A female from Kaoma shared: *“It was difficult to sell our produce, no customers were coming to the market. Also, everyone was at home, children didn’t go to school and needed to be fed for all the meals of the day. There was simply not enough food for all of us.”* Harsh experiences

were confirmed by others: *“Prices went up, business down. It was difficult to meet, discuss anything, to plan. Children’s presence at home always was challenging,”* (male, Mumbwa). *“It was difficult for us to provide enough cash for the family,”* (male, Mumbwa). A female member of another cooperative from Mumbwa said: *“In Covid, we argued a lot at home, we were home all the time. It was hard,”* while her colleague added: *“And our voices as women at home were not heard by men.”* Cooperative members from Kaoma told us that some families broke up and divorced, and couples argued a lot because of no income. A male farmer explained: *“Some girlchildren were even forced by parents to drop out of school and get married. It is very sad to see that. For them, it meant destroyed lives. On the other hand, luckily, this was not the case for the cooperative members. We somehow managed it together. We ended up better off in comparison with others in the community,”* only some of the experiences had a positive spark. A female from Mumbwa suddenly started smiling: *“Sometimes husbands helped with chores, things changed a bit,”* her colleagues from another Mumbwa cooperative welcomed that bars were closed, so their spouses spent more time at home. On the other hand, they admitted, that sometimes they argued more because of the long time spent together.

There is a high probability that the pandemic and related economic crisis prevented the cooperative members from obtaining more benefits from participation in the development intervention, as well as from their cooperative membership overall (this concerns the control group as well).

Members of most cooperatives that participated in focus group discussions mostly agreed that their cooperative has become a social safety net that helped them endure hard times. Until then, members have been supporting each other. A female coop member from Kaoma said: *“We feel empowered thanks to mutual support and help within the cooperative, mainly when someone’s harvest fails.”* Another male member added: *“The reserves of grains or ground nuts that we make allow us to support others in those cases.”* Members of two cooperatives from Mumbwa reported they shared school materials for children, they could sustain themselves, and even help their friends outside the coop.

Social benefits

Based on the results of the survey, individual knowledge of sustainable agricultural practices and understanding of the benefits of agricultural diversification increased in the project as well as non-project cooperatives. Similar development

occurred in individual capabilities (use of technology in production and food processing). The improvement reported by project cooperatives was found significantly higher, than in control group cooperatives.

Experiences shared by farmers from the project cooperatives, help us interpret the quantitative findings. Female coop members from Mongu district told us: *“We are empowered by the knowledge we gained, it is the most visible empowerment, on an individual level. We apply the knowledge of crop rotation (conservation tillage) to keep our land fertile, so we use only part of it, not the whole plot all the time.”* Farmers from Limulunga agreed: *“We diversified our production to livestock, and we put manure on our crops (as fertilizer).”* Farmers from Kaoma expressed: *Among other cooperative benefits, we acquired knowledge on sustainable practices, and we adopted these in our fields. We created ridges against soil erosion, we learned how to apply fertilizer, and how to control pests and diseases. We use manure, and composting, we apply intercropping and let the soil regenerate for some time, so we plant groundnuts and cowpeas. We also make efforts not to cut trees when it is not necessary, because now we are aware of climate change.”* Concerning training, farmers also shared experienced challenges: *“For some of us, it was challenging to participate because of long distances and bad roads, not all members could participate.”* Although several barriers were found, results suggest a positive impact of the educational component of the intervention.

In addition to knowledge and capacities gained through training on SAPs, members of a mixed-gender cooperative from Kaoma reported a significant benefit received through training on financial literacy: *“We learned to save money. Now we don’t buy useless things anymore, we save for school fees instead. From the money earned from the production, we can finally send our children to school.”*

The findings that agricultural cooperatives can enhance members’ knowledge and skills are consistent e.g. with the research conducted by Lecoutere (2017) in the *“P’KWI Farmer to Farmer Cooperative Society”* in Uganda. Alongside the already mentioned economic benefits, the author presents evidence that the P’KWI membership enhanced women’s knowledge and capacities to adopt sustainable agronomic practices.

As in our case, Boros & Mcleod (2015) in a study that assessed the impacts of the Integrated Dairy Schemes in Afghanistan, reported increased training-related knowledge and skills, and related them with women’s enhanced agency. The educational component

of cooperative activities appeared to be crucial for women members. Not only that it increased their agronomic knowledge, but they also gained more independence through learning practical skills that helped them provide for themselves and their family members. It enabled them to gain free mobility and broadened their horizons through exposure visits to other dairy farms.

In one of the FGDs, women farmers from Mongu shared their cooperative experience, which might be like those of the women from Afghanistan: *“We felt empowered when we could participate in training that took even 4-5 days. We could leave home for such a long time. Otherwise, we would have to take care of the household.”* Some of the project-supported cooperatives also experienced exposure visits (a limited number due to the pandemic-related restrictions). Women from another cooperative in Mongu told us: *“We participated in field visits in Limulunga, where we saw a preparation of land and seeding procedure, so we could learn from them.”*

Other results of this study reflected an increase in women’s agency. Farmers in intervention cooperatives perceived increased feelings of autonomy and independence due to their cooperative membership. The analyzed responses of non-intervention cooperative members showed a neutral standing of this group of respondents, on average. The difference between the two groups is statistically significant. Most women in both groups reported they could freely participate in community activities. Lecoutere (2017) in her study also reported an increased agency acquired by women through participation in cooperatives. Based on her research, it manifests on the household level, group, and community level. Another case study by Ferguson and Kepe (2011), which focused on women’s social empowerment in the Manyakabi cooperative in southwestern Uganda, found women’s increased self-confidence and improved capabilities in negotiating with men and making household decisions. A similar conclusion was also made by Boros & Mcleod’s (2015) assessment of the FAO project in Afghanistan. The authors found that thanks to the cooperative training attended, women’s household and community bargaining power improved, furthermore, so did their ability to spend money on what the women valued while having a good reason to. For example, they could send their children to school, and provide them with better quality nutrition and improved health care.

A shift in women’s agency connected with changes in perceptions of their surrounding networks is evinced in the following quotes. Women from a cooperative in

Mongu told us: *“We now feel more recognized in the community and stronger in negotiation with our husbands.”* A female farmer in Kaoma said: *“A vision of women being only housewives is no longer there. Now, spouses go to their wives for advice.”* Women farmers from another Kaoma cooperative shared, that *“in the beginning, it was more difficult for women to participate in the cooperative, but now the husbands see it as a benefit.”* One of them added her personal experience: *“I feel that my voice is more heard even at home. And we have enough food, so the arguments are less frequent.”* Nkeyema farmers, females, also expressed their satisfaction: *“Now we feel we can sensitize our husbands and kids. We are not seen only as housewives anymore. That is the past, now there is more understanding.”* Similarly to our results, Abdu et al.’s (2022) study conducted in Ghana, which focused on female participation in FBOs and their empowerment in Ghana revealed increased women’s self-confidence, more respect from their husbands, family, and community, and enhanced agency manifested in decision-making. Also, their self-confidence increased, and they reported fewer cases of domestic violence, compared to their prior experience.

Both the intervention and non-intervention groups of cooperative members reported improved social capital. Increased social contact with other cooperative members, on other than business occasions, was perceived as significantly higher in project cooperatives. Development of trust and sharing of experience with other farmers in the group were also perceived positively. Quantitative evidence proposed by this study can be supported by statements of farmers from FGDs. Cooperative members from Limulunga for example feel more united, compared to 3 years back. As a male member expressed: *“Now, we have a clear mission, we move together in the same direction, not as individuals anymore. Trust among farmers has improved.”* Farmers from Nkeyema agreed: *“Now we work more as a team. Trust is high and the executive board is transparent. There is more mutual understanding, the views of all are heard and discussed and decision is taken by all members. In the beginning, it was difficult to cooperate like that.”*

Both (project and control) groups of women cooperative members agreed that by the time of the project ending, they had become more active within their communities compared to a situation 3 years back. The difference between the groups was not statistically significant. Cooperative members from Limulunga shared their positive

experience: *“We are empowered through training; we feel more knowledgeable than other community members. And we also want to spread the knowledge further.”* Farmers from Nkeyema all agreed, that both genders equally benefitted from the cooperative: *“We became empowered by new knowledge and skills. Our voices in the community became louder, we even started teaching others. We help unite the community and address issues during community gatherings. Others are grateful for that.”* A similar experience was found in Kaoma: *“Besides us, the project also empowered other members in the community, because it created new jobs in the locality and contributed to skills sharing.”* According to farmers from Kaoma, the community members see how the cooperative performs. *“We feel respected. Others come to us for advice on growing crops, vegetables, or even conflict solving, in which we are experienced.”* Members of a cooperative in Mongu: *“Our position in the community strengthened. We have a better chance to speak,”* (male member). *“But it depends on the type of meeting and if the person in charge wants to hear us out,”* (female member). All female members from the cooperative told us: *“Now our spouses listen to us more. If there is a matter to be discussed, we bring ideas together, and then agree on a solution mutually, in a couple.”*

Concerning decision-making about their farms, women preferred making all the decisions by themselves, not in the group (with no significant difference between project and control group). This might be one of the explanations for why most members have not been selling their products to their cooperatives. Although both compared groups of respondents assessed time dedication to cooperatives and the intensity of their participation positively (with a result significantly higher for the project group), the proportion of members’ production sold to cooperatives was very low. It ranged between 26.4% (control group) and 36.5% (project group). This was a surprising finding, contrasting with the results of research presented in academic articles. As stated by Meier zu Selhausen (2016), collective marketing is a crucial service of cooperatives to their members, to reduce transaction costs, i.e., all visible and invisible costs that are expended to perform market transactions (Williamson 1985). For smallholders’ family farms, these transactions tend to be costly, they are unable to realize economies of scale. As individuals, their positions in negotiations with local traders are oftentimes disadvantageous. Through cooperatives, members can get together and overcome such barriers, employ their collective bargaining power, to negotiate better conditions (Fischer & Qaim 2012).

In the FGDs, members of some cooperatives shared their perspectives, possibly explaining our results differing from the consensus. Farmers from Mumbwa shared: *“We sell our produce to middlemen because the cost of transportation to markets is too high for us.”* The same challenge was experienced by farmers in Kaoma: *“We sell our produce to local middlemen because it is the easiest way. We know that in Mongu we would get a higher price, but transport to town would be complicated, we have no means of transport.”* Based on Fischer & Qaim (2012) it may be that in hardly accessible rural areas farmers face transaction costs so high, that they cannot be overcome by an emerging business with limited resources.

Environmental benefits have been described together with economic and social due to their interconnectedness.

6.2. Determinants of Farmers’ Active Participation in Agricultural Cooperatives

Results revealed three determinants that mildly influence the intensity of women’s participation in agricultural cooperatives under the study: a woman’s full control of her income. The findings were statistically significant. Full control of women’s income ($p= 0.002$, coef. 0.161). Free participation in groups and community ($p= 0$, coef. 0.143). Sufficient extension support for cooperatives perceived by cooperative members ($p= 0.046$, coef. 0.046). The correlation coefficients are low; therefore, the model has a low magnitude. The influence of other variables has not been found statistically significant.

In most studies dealing with women’s participation in cooperatives, the word “participation” is employed in the meaning of membership. However, mere membership is not sufficient since passive members’ participation does not automatically translate into benefits.

Meier zu Selhausen (2016), in the study of a coffee cooperative in Western Uganda, where he explored determinants of females’ participation (i.e. of their membership) in collective action, as well as determinants of the intensity of their involvement, found, that it is the length of membership, access to extension, gender-equal power relations and joint ownership of land, that contributes to and enables women’s pro-

active participation, which can inspire further positive outcomes. Similarly, our results show a weak, but highly statistically significant positive correlation between the intensity of female participation in collective action and control of her income (measure of her agency, and intra-household power relations), and free participation in groups and community (agency, decision-making on her activities). The perception of sufficient extension support is also weakly but significantly positively correlated with women's participation in cooperatives.

6.3. Policy Recommendations

Concerning support of gender equality and equity, we recommend the government to address the long-term drivers of gender inequality (socio-cultural norms). To sensitize members of legislative, executive, and judicial bodies, who are responsible for the creation and implementation of laws, and policies, and have judiciary power, to be aware of gender issues and the shortcomings of the present system. Promote gender equality and women's empowerment among members of public administration, and support awareness-raising to the public.

To address the inconsistency of the Constitution and common law with an allowed application of patriarchal customary law, e.g. in women's access to land. Pay attention to gender equality and equity in the legislative process. Focus on rectification of existing discriminatory laws.

The government should further invest in gender-sensitive policy implementation, and in research to monitor and evaluate progress, involving the collection of gender-disaggregated data that allow for the assessment, as

Regarding agricultural cooperatives, based on our results, we recommend focusing on the proper implementation of the Farmer Input Support Programme, fairness in the selection of beneficiaries, transparency of selection criteria, and provision of the correct information on the program capacities. It is also necessary to continue focusing on supporting the most vulnerable farmers (financially, through education, etc.), who are not eligible for the support provided to cooperative members, because their economic situation, illiteracy, etc., hinders their participation in collective action. This should

prevent the widening of gaps between smallholder farmers in cooperatives, and cooperative non-members.

We would also recommend that the government publish the Registrar of the Cooperative Societies online to provide a transparent verifiable source of information on cooperatives. So far, such information can either be obtained directly from the Ministry of Commerce, Trade and Industry, or from officers on provincial or district levels, which is neither practical nor verifiable, and the information provided may vary.

6.4. Study Limitations

The results of the Women's Empowerment Index, and their comparison between the two groups of respondents, may be influenced by other factors than by the project intervention due to the initial selection of beneficiary cooperatives. They were selected, among others, based on how functional they were before the start of the intervention, by their motivation, or social capital, for the impacts of the project, to be as sustainable as possible. When starting conditions varied between the two groups of respondents, so might the intensity of the outcomes.

The quantitative evaluation questionnaire took 1 hour 30 minutes on average per respondent, it was perceived as too long and tiring. Most control cooperative members who participated in the end-line data collection (we employ the data in this study) did not come from the same cooperatives as the baseline control group that was selected for the project beginning. Therefore, other respondents that were available were selected from different cooperatives identified by the implementing organization. Due to a weak internet connection in the field combined with other technical issues, some questionnaires with collected data were lost from the KoBo application. It happened twice. Data were then re-collected from respondents who lived close (Hejkrlik et al. 2022).

6.5. Recommendations for Future Research

The intervention ended in 2021. The question is whether the benefits persist and how the studied cooperatives currently fare. Future research could focus on the longer-term impacts of the development intervention. Its results could be used mainly by the

implementing organization and NGOs in the region so that they could repeat the successes of the project and avoid similar deficiencies in future interventions.

7. Conclusions

The presented study aimed to explore agricultural cooperatives in Zambia, and whether they could be used as an effective tool to enhance women's empowerment. In the research, we employed data obtained from an evaluation of a development intervention, implemented by a Czech non-governmental organization in Zambia.

The Women's Empowerment Index enabled us to compare the degree of empowerment perceived by female members from the intervention-supported (project) and non-intervention (non-project, control group) cooperatives. Statistically significant differences between the two groups were observed in each of the three dimensions of women's empowerment.

In the Personal dimension, differences between the project and control cooperative members were found in women's potential for economic independence, individual training-related knowledge, knowledge application (skills), and feelings of autonomy and independence.

In the Relational dimension, differences were found in the degree of increase in social contact, in the number of groups the women participated in, the intensity of active participation in a cooperative, women's bargaining power, and control over spending their time.

In the Environmental dimension, the sufficiency of extension support, financial support of cooperatives, and access to services were also perceived differently by project participants and respondents from control group cooperatives.

In almost all variables where significant differences were found, the results favoured the cooperatives stimulated by the development intervention, whose members perceived the improvement as more substantial and the situation as more positive, compared to the control cooperative members. The only exception was the variable of women's control over spending their time, which was perceived as slightly significantly higher by women from non-project cooperatives.

If we disregard the differences between the project and control group respondents, and only look at the mean response values, we can say that average responses were mostly positive (evincing positive results of individual empowerment components), in fewer

cases, the respondents answered neutrally, and in few of the cases expressed disagreement (rather negative results). Predominantly positive results may signify the positive influence of cooperative participation on women's empowerment. At the same time, the degree of cooperative benefits depends, among others, on external factors, such as further education opportunities to support cooperatives in functioning properly, according to cooperative principles, and services provided to emerging cooperative businesses externally.

Employing a multiple linear regression analysis, we found three factors that had a positive relationship with the intensity of women's active participation in agricultural cooperatives. Two are directly related to female agency - control of their income, and free participation in cooperative and community activities. The relationship was highly statistically significant, although weak. The third factor, showing a slight positive correlation was women's perception of sufficient extension support provided to cooperatives.

We conclude that cooperatives can become actors on the way to support women's empowerment and tackle gender inequality if they function as best as possible according to cooperative principles, surrounded by a supportive institutional environment, with simultaneous attention paid to the existence of discriminatory socio-cultural norms, and efforts made to address them (Lecoutere 2017).

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List of Appendices

Appendix 1: Conceptual Framework – Women’s Empowerment Index

Appendix 2: Results of Women’s Empowerment Index – Comparison of Project and Control Cooperative Members (all variables)

Appendix 3: Complete Questionnaire from the Project Endline Data Collection