

Role of Informal Savings Clubs in Enhancing Women's Adaptive Capacity to the Impact of Climate Change on Urban Agriculture: The Case of Female Head of Households in Dangamvura High Density Suburb, Mutare, Zimbabwe

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ABSTRACT

Informal savings clubs have emerged as a valuable community-based strategy for enhancing resilience and enabling adaptation to climate change impacts. However, limited research exists on how these clubs specifically support the adaptive capacity of urban farmers. This study aimed to explore the role of savings clubs in helping female heads of households cope with and adapt to climate change, particularly drought, using a case study of Ward 15 in Dangamvura, a high-density suburb in the city of Mutare, Zimbabwe. Employing a mixed-methods approach, the study integrated quantitative data from a household survey with qualitative insights from key informant interviews. Findings indicate that savings clubs significantly enhance the resilience of female-headed households by facilitating climate adaptation, improving food security, enabling income diversification, and strengthening social cohesion. To maximize their impact, the study recommends that government agencies, the city council, microfinance institutions, and NGOs support and strengthen savings clubs through tailored training in entrepreneurship, financial literacy, and governance; provision of seed funding or matching grants to broaden access for low-income women; integration into climate adaptation programs with subsidized inputs and information and support towards water storage and irrigation investment; promotion of climate-resilient livelihoods; inclusion of savings clubs in local development plans; and the facilitation of peer-to-peer knowledge exchange.

Key Words: Climate change, drought, female headed households, savings clubs, urban agriculture, Zimbabwe.

INTRODUCTION

The urban population of Zimbabwe, though still lower than the African and global averages, is growing rapidly, with a significant increase from 1.5 million (22.7% of the population) in 1980 to 5.9 million (38.6%) in 2022 (ZIMSTAT, 2022). Alongside this urban growth, there has been a noticeable rise in the proportion of female-headed households, from 35% in 2011 to 39% in 2019 (ZIMSTAT, 2022). Due to limited formal employment opportunities, many of these households rely heavily on urban agriculture as a crucial source of food and livelihood. However, increased variability in temperature and precipitation and droughts due to climate change are increasingly threatening the sustainability of urban agriculture and undermining food security (Nyathi and Mlambo, (2024), Dube et. al., (2021)). According to the International Disaster Database, Zimbabwe recorded 7 drought events since 2001 (EM-DAT and CRED/UCLouvain, 2025). The country is predicted to receive more frequent and prolonged mid-season droughts in the future (CTCN, 2017).

Climate change-related events like drought are negatively impacting agricultural productivity by reducing the availability of water, altering growing seasons, and causing extreme weather conditions that affect crop yields (Ayanlade et. al. (2022); Magwegwe et. al. (2024)). Unpredictable rainfall patterns, heat stress, and protracted droughts are reducing soil moisture and shortening growing seasons, all of which have severe consequences for crop production (Chari et al., (2022); Ndlovu et. al., (2020)). Studies in Sub-Saharan Africa have reported decreases in the yields of vegetable crops and rainfed crops such as millet, maize, sorghum, beans, and rice due

to changing climate (Nkrumah, (2018); Ndlovu et. al., (2020)). Farmers engaged in urban agriculture are among those vulnerable to climate impacts, as they are exposed to changing environmental conditions.

Studies indicate that urban agriculture in Zimbabwe is significantly dominated by women who have turned to urban agriculture to sustain their livelihoods in the cities in Zimbabwe (Hadebe and Mpofu, (2013); Hungwe (2006); Nyathi, and Mlambo, (2024); Mudimu (1996)). Scholars examining the contribution of urban agriculture to food security highlight that urban households engaged in farming can produce their own food, gain easier access to nutritionally rich foods, and benefit from more varied and stable diets (Zezza, and Tasciotti, (2010); Poulsen et al., (2015); Nyathi, and Mlambo, (2024)). While urban agriculture is an essential source of food for female headed households, they face gender-specific constraints in their urban agricultural activities, such as limited access to off the home property land, inadequate resources, limited water availability, lack of supportive government and municipal policies which affects their efforts to achieve food security (Gunhidzirai, (2023)).

Climate change is exacerbating the challenges that they already face. While Zimbabwe has made progress in reducing gender inequalities, women across the country remain marginalized, particularly in social and economic spheres (UNDP, 2024a). Women still face significant barriers to accessing key agricultural resources, such as land and property, which limits their ability to adapt to changing environmental conditions (UNDP, 2024a). These gender disparities significantly reduce the adaptive capacity of female-headed households, making it more difficult for them to cope with and recover from the impacts of drought.

Savings clubs can play a vital role in helping women mobilize funds to support household food purchases, invest in drought-resistant crops, and secure water supplies for irrigation - critical actions for survival and livelihood recovery (Dzvimbo et al., 2022; Moyo & Zimusi, 2024). While the importance of savings clubs in enhancing household resilience to climate-related challenges is widely acknowledged, there is limited empirical literature in Zimbabwe that specifically examines their role in strengthening the adaptive capacity of women engaged in urban agriculture. This paper investigates the role of savings clubs in supporting female-headed households practicing urban agriculture in the Dangamvura high-density suburb of Mutare to adapt and cope with the impacts of drought. It also offers recommendations for strengthening the contribution of savings clubs to climate resilience among women in urban agriculture.

Conceptual Framework

The IPCC (2008) defines adaptive capacity as the ability of a system (or household) to adjust to the effects of climate change, including climate variability and extremes, to moderate potential damages, capitalize on opportunities, or cope with consequences. This study adopts the Sustainable Livelihood Framework that the British Department for International Development (DFID) developed and integrated in its program for development cooperation in the late 1990s. The DFID (1999) livelihood framework has five core asset categories or types of capital (natural, physical, economic, human, and social capital) upon which livelihoods are built to achieve positive livelihood outcomes. Increasing access to these capitals which can take the form of ownership or the right to use these assets is important for poverty reduction and a livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base (DFID, (1999)). Theron et. al., (2023) and Olivier (2018), note that adaptive capacity is built on the five assets of the Sustainable Livelihood Framework (natural, physical, economic, human, and social capital).

Natural capital refers to the natural resources and environmental assets that individuals, households, or communities rely on to support their livelihoods, such as land, water, air, forests, minerals, and biodiversity, which are vital for achieving long-term well-being and sustainability (UNDP, (2017); DFID (1999)). It is not only the existence of different types of natural assets that is important but also access of the household and quality of the resources (DFID, 1999). Physical capital refers to the physical assets that the household owns such as housing, farm equipment, and tools and the physical infrastructure that support livelihood and farming such as water, sanitation, electricity and transport supply (DFID (1999)). Financial capital refers to cash resources and financial instruments that can be used to enhance people's capacity to pursue livelihood activities, mitigate risks, and invest in future opportunities such as annual income, household savings, access to

credit and loans, and pensions. Human capital refers to the skills, knowledge, education, health, and experience that individuals or households possess, which are essential for pursuing livelihood strategies and improving their well-being. Social assets refer to the networks, relationships, and social connections that individuals or communities have access to and can leverage for their well-being and livelihood outcomes.

Besides the five assets or capitals of the SLF, it is important to analyze institutional resources. Institutional resources refer to the formal and informal structures, organizations, rules, and policies that shape how individuals and communities can access, manage, and benefit from the other forms of capital. Institutional resources influence how people can use and convert different types of capital into livelihood outcomes. Institutional resources can include the formal and informal local organizations that the livelihood of the household depends on during times of climate hazard, access provided by local institutions in times of climate hazard, regulation of access to key resources, the fairness of access to key resources, dependence on outside support from local institutions, among others (Mesfin et al., (2020)).

Gender inequalities, driven by socially constructed gender norms, differentiated roles and responsibilities, and unequal access to resources, information, technologies, and services, significantly affect the adaptive capacity of women by affecting the different capitals (Dev, and Manalo IV, 2023; Assan et al., 2018; Bryan et al., 2024). Studies have found that female-headed households often have reduced capacities to prepare, cope, and recover from climate change impacts due to their gendered roles, larger family sizes, caregiving responsibilities, lower levels of employment, and limited access to productive resources (Gaisie et al., 2022; Flato et al., 2017).

Savings clubs can help women to improve the SLF capitals and enhance their productive capacities. Literature indicates that in some African countries, savings clubs are playing a major role in helping households cope and adapt to climate change as they provide resources for buying food, agricultural inputs, and building of physical assets (UNDP, (2024b); Graney and Perlik, (2025)). Besides material support, these informal groups are a major source of psycho-social support.

Informal Savings Clubs In Zimbabwe

Informal savings clubs commonly referred to as “mukando” in Zimbabwe have been a long-standing tradition where members pool resources for common goals existent in both rural and urban areas (Nyabeze et. al., (2025)). Savings clubs are particularly popular among women and those in the informal sector who may not trust the banks or have limited access to traditional savings and loan options (Lukwa et. al., (2022); Chineka and Mundau (2021)). Years of currency instability and numerous bank failures have eroded confidence in banks in Zimbabwe (Dzoma, (2024)). Informal savings clubs offer a more accessible alternative, especially for those without collateral for traditional bank loans (Mushawatu, 2024).

All informal savings club schemes operate outside of formal banking systems. In an informal savings club, a group of women in the community (the number can vary from 4 to 10 or more) voluntarily come together regularly and pool their money to generate a common fund. Members contribute a set amount of money on a weekly or monthly basis for an agreed period or cycle. There are different types of savings clubs practiced in Zimbabwe. In one type of savings clubs each member contributes the same amount each month, and one member rotationally takes the whole fund contributed until the cycle ends - rotating savings club. As a result, each member can access a larger sum of money during the cycle of the savings club and use it for whatever purpose she wishes to such as buying agricultural inputs, starting a business, paying fees etc. In this type of savings clubs, the pooled funds are immediately taken by the entitled member, there is no need for a treasurer.

The other type of savings club is where the funds accumulate over a cycle period like 6 months with one member acting as treasurer. Members can borrow the accumulated amount and then repay the loan over time with some interest. The pooled funds including the interest are shared equally among the members at the end of the cycle. This type of savings club is a rotating savings and credit club.

The last type of savings club is where pooled funds can be used for different purposes that the group agrees to. The most common use in Zimbabwe is buying groceries in bulk and sharing amongst the members. The club can also use the funds to start a cooperative business such as sewing or mushroom project.

RESEARCH METHODOLOGY

Study Area

This study was conducted in Dangamvura high-density suburb of Mutare city in Zimbabwe. Mutare is the third-largest city in Zimbabwe, with a population of approximately 224,802 people according to the 2022 Population and Housing Census (ZIMSTAT, 2022). Dangamvura is one of the largest high-density suburbs in Mutare. The study focused specifically on Ward 15 of Dangamvura, which has a population of 22,150 people, of whom women constitute approximately 53% (ZIMSTAT, 2022). The ward comprises 5,767 households, including both male- and female-headed households. In 2020, female-headed households constituted approximately 34.8% of all households in the ward (ZIMSTAT, 2022). Based on this proportion, the estimated number of female-headed households was 2,006.

Research Design and Methods

The study employed a mixed-methods approach, combining qualitative and quantitative research methods to provide a comprehensive understanding of the experiences of female-headed households in relation to informal savings clubs, climate change, particularly drought, and urban agriculture.

The qualitative component involved semi-structured interviews with seven key informants, including community leaders and experts with knowledge of the study area and the issues under investigation. The interviews sought to understand the impacts of climate change, particularly drought, on crop production as an aspect of urban agriculture in Dangamvura. The interviews also explored the adaptation and coping mechanisms employed by female-headed households, the role of savings clubs in supporting adaptation and coping, and recommendations for strengthening support for female-headed households.

The quantitative component involved administering a structured household questionnaire to a sample of female-headed households. The study employed a purposive, non-probability sampling approach and included 68 female-headed households from an estimated population of 2,006 female-headed households. The target sample size was informed by an online sample size calculator using a 90% confidence level and a 10% margin of error (Qualtrics, n.d.).

Participant Selection and Sampling

The eligibility criterion for participation in the household survey was that the participant be a woman, regardless of age, who was the head of a female-headed household residing in Ward 15 of Dangamvura. The study used a combination of purposive and snowball sampling techniques to identify and recruit participants.

Initially, three participants were purposively identified with the assistance of individuals familiar with female-headed households in the study area. These initial participants were subsequently asked to identify and refer other women who met the study's eligibility criteria. Snowball sampling was therefore used to expand the pool of participants through referrals from existing participants within their social and community networks. This approach was considered appropriate given the specific characteristics of the target population and the need to identify eligible female-headed households within the study area.

Data Collection and Analysis

Data were collected in January and February 2025. The household questionnaire collected information on participants' socio-demographic characteristics, the impacts of climate change, particularly drought, on crop production and urban agriculture, adaptation and coping mechanisms employed by female-headed households, and the role of savings clubs in supporting adaptation and coping strategies.

The qualitative interviews with key informants complemented the household survey by providing contextual and institutional perspectives on climate change, urban agriculture, household adaptation and coping, and the role of savings clubs.

The quantitative and qualitative data were analyzed using complementary approaches. The study employed the Sustainable Livelihoods Framework (SLF) as the principal analytical framework for examining the livelihood assets, vulnerabilities, coping strategies, and adaptation mechanisms of female-headed households in the context of climate change and drought. Data collected from the survey was coded, verified, cleaned and captured into Microsoft Excel software package due to its ease of handling coded variables. Descriptive statistics such as mean, frequencies, and percentages were used to analyze the data using MS Excel. Bar graphs were used to illustrate the findings.

Comparative analysis was also undertaken between female-headed households that belonged to savings clubs and those that did not. This comparison was used to examine differences in adaptation and coping strategies and to assess the role of savings-club membership in strengthening households' capacity to respond to climate-related challenges.

Qualitative data from the key informant interviews were analyzed thematically, with themes developed around the impacts of drought on urban agriculture, household adaptation and coping mechanisms, the role of savings clubs, and recommendations for strengthening support for female-headed households. The qualitative findings were used to complement and contextualize the quantitative findings.

RESEARCH FINDINGS AND DISCUSSION

Membership of female heads of households in informal savings club

Overall, 40% of the 68 respondents (or 27 of the 68) were members of a savings group during the time the questionnaire was administered. On average, these women had been members for five years and received monthly benefits of around US\$42, with some reporting benefits as high as \$200. The most common types of savings clubs were those that facilitated group grocery purchases and those that provide rotating funds among members.

Table 1. Membership of female heads in informal savings group

	Total sample (N=68)
Proportion of female heads of household that are part of a savings group (%)	40
Average length of membership (years)	5
Monthly benefits (US\$)	42

As shown in table 2, women who were part of savings clubs were, on average, older (59 years) compared to non-members (51 years), and more likely to be widowed (93% vs. 58%). They also tended to have slightly larger households. These characteristics suggest that older, widowed women with caregiving responsibilities are more likely to join savings clubs, likely because of increased vulnerability and need for support.

Table 2. Overview of socio-demographic statistics of the total sample of the female headed households

	Total sample (N=68)	Female heads in a saving club n=27	Female heads not in a saving club n=41
Average age (years)	54	59	51
Average Household size	4.1	4.4	4
Widowhood as primary reason for being female headed (%)	72	93	58

Climate change and its impact on urban agriculture

Ninety-four percent of the 68 female heads of households surveyed indicated that they were aware of climate change and understood the threats it poses to their urban agriculture activities. All participants reported having experienced an average of three droughts over the past 10 years. While the 2025 season brought favorable rainfall, respondents observed that rainfall patterns have shifted, with rains arriving later than usual, and temperatures have steadily increased over time.

Respondents commonly grow maize and leafy vegetables such as covo, mustard greens, rape, and spinach in their homestead gardens, irrigated primarily with tap water. They noted that leafy vegetables are essential for daily consumption; however, water rationing during drought periods severely limits their ability to irrigate.

Maize - the staple food crop - is the most widely cultivated crop on plots located away from their homes, followed by pumpkins, beans, sweet potatoes, and cowpeas. These off-plot gardens, often situated along roadsides, on vacant land, or in peri-urban areas, are highly dependent on rainfall. During droughts, maize yields are significantly reduced. Respondents cited the 2023-24 drought season as a recent example, during which widespread crop failure led to reduced household food security.

These findings further illustrate that climate adaptation is strongly influenced by access to water and productive resources. Awareness of climate change was widespread among respondents, but the ability to respond to drought depended partly on access to water, finance, land, agricultural inputs and knowledge. This supports the broader climate-adaptation literature, which emphasizes that awareness of climate risks does not automatically translate into effective adaptation in situations where households lack the resources and institutional support necessary to act (Magwegwe et al. 2024; Naazie et al. 2024, Berhanu et al. 2024).

Participants belonging to savings clubs had better physical capital

Physical assets play a crucial role in enhancing a household's adaptive capacity to climate change by providing the resources needed to withstand, recover from, and adjust to climate-related shocks (IPCC, 2022). Households with stronger physical capital may be better positioned to make proactive investments in resilience, including water storage, irrigation, improved housing and livelihood diversification.

Table 3 shows that female heads of households who belonged to a savings club tend to own their homes and have larger homes and bigger home gardens and off-plot gardens. For example, 85% of savings-club members owned their homes compared with 51% of non-members. Savings-club members also had better access to tap water for drinking and irrigation. These differences suggest that members had greater material resources with which to respond to drought.

Table 3. Ownership of physical capital by the female headed households

	Total sample (N=68)	Female heads in a saving club n=27	Female heads not in a saving club n=41
Proportion of female heads of household that own their house (%)	65	85	51
Average number of rooms for household	3.8	5.2	3.4
Average home garden size (Square meters)	89.9	94	86
Average off-plot garden size (Square meters)	826.7	1172	481
Proportion of households in the sample that use tap water for drinking and irrigation (%)	72	93	59

Participants explained that resources obtained through savings clubs enabled them to invest in physical assets such as water tanks, which are particularly important during periods of water scarcity. Other participants reported constructing durawalls to improve household safety and chicken runs to support poultry production. Such investments demonstrate how informal financial resources can potentially be converted into productive and protective assets that strengthen household resilience.

The relationship between savings groups and physical capital is consistent with the broader understanding of adaptive capacity as multidimensional. Adaptive capacity depends not only on financial resources but also on physical assets, knowledge, social networks and institutional support. Recent research suggests that savings groups can provide an entry point through which several of these dimensions are strengthened simultaneously, particularly through the combination of financial resources, social learning and collective action (Nabami et al., 2024).

Participants belonging to savings clubs had more financial capital

Financial resources are crucial to a household's ability to adapt to drought, as they provide the means to invest in resilience strategies, diversify livelihoods, and recover from climate-related shocks. Households with higher financial assets are generally better equipped to cope with and adapt to drought.

Table 4 shows that female heads of households who belonged to a savings club had a greater capacity to adapt as they had a higher average monthly income than those who were not in a savings club. They also had a higher average monthly pension and remittance.

Table 4. Average Monthly income and remittance of the female headed households

	Total sample (N=68)	Female heads in a saving club n=27	Female heads not in a saving club n=41
Average monthly income (US\$)	129	150	115
Average monthly remittance (US\$)	92	105	72

The savings clubs themselves provided an additional source of liquidity. All female respondents who belonged to informal savings groups indicated that the financial benefits obtained from membership were extremely helpful for securing food and livelihoods. This finding is consistent with research showing that informal savings arrangements can help households smooth consumption and manage income shocks. For example, Kouandou and Zeh (2024) found that informal savings mechanisms can help Nigerian households insure consumption against rainfall-related shocks. Zimusi and Moyo (2024) found that community-based savings groups enhance the resilience of rural women in Zimbabwe's Umzingwane District against climate-induced drought. Their findings indicate that the savings groups provided essential financial resources and built social capital for coping with environmental challenges.

Similarly, review study by Lukwa et al., (2022) shows evidence that suggests that participation in community savings arrangements in sub-Saharan Africa can be associated with improvements in women's economic well-being and empowerment. Thus, savings groups can provide women with greater access to financial resources and opportunities to make decisions concerning savings, borrowing and investment.

Savings clubs provided resources for enhancing food security and livelihoods

Savings clubs provided critical support for household food security. More than half of the members used club funds to buy groceries in bulk, helping to ensure food availability for extended periods, in some cases six months or more. Major food items purchased included rice, sugar, salt, wheat flour, cooking oil, mealie meal, dried fish and other essential foods.

One respondent from Ward 15, Dangamvura, explained:

“My savings club has helped my family to survive in drought era as the groceries bought in bulk enable us to secure adequate food that will last for a prolonged period of time of more than 6 months”.

Thus, savings clubs appear to function not only as financial mechanisms but also as informal food-security institutions. Collective purchasing can increase purchasing power and allow households to maintain food stocks during periods when agricultural production or household income is under pressure. This is consistent with Lukwa et al. (2022), whose review of informal savings groups in urban sub-Saharan Africa identified food security and household welfare among the important outcomes associated with participation in such groups.

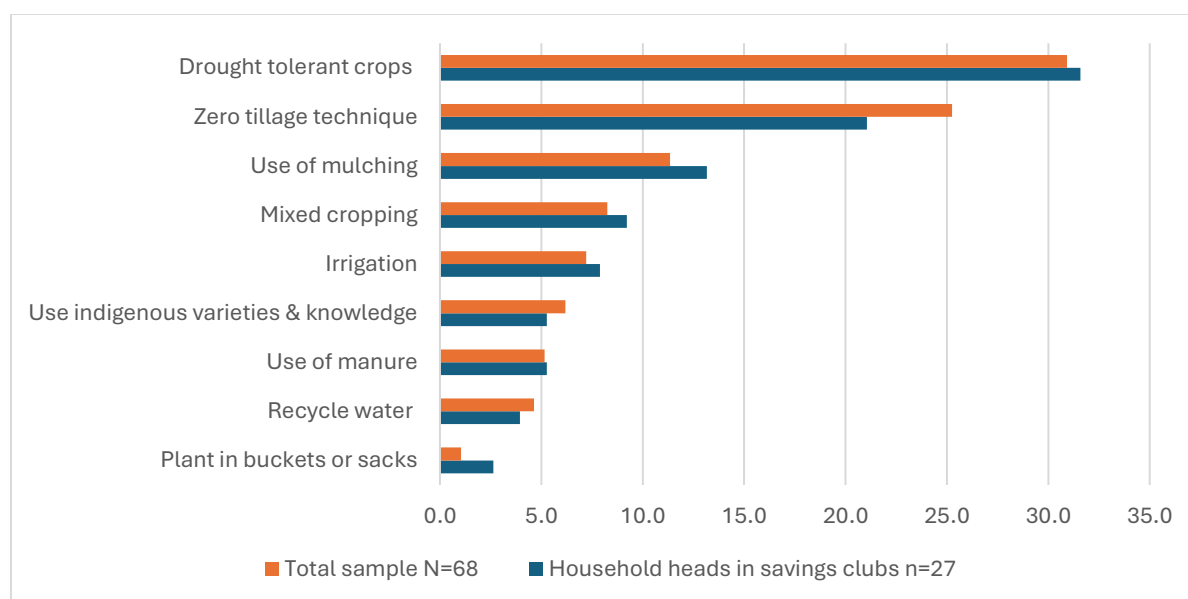
Furthermore, respondents indicated that savings groups provided emergency funds for school fees, medical care and essential household items such as pots, plates and blankets. These uses demonstrate the flexibility of informal finance. Unlike narrowly targeted adaptation finance, savings-group resources can be redirected rapidly according to household priorities, which can be particularly valuable during climate and economic shocks.

Savings clubs provided resources for adaptation measures

Participants that are part of a savings club noted that they could borrow directly from their pooled savings to help them support their adaptation efforts. Figure 1 shows the different adaptation strategies adopted by the 27 female heads of households that belong to a savings club compared to the adaptation strategies adopted by the whole sample of 68. Savings-club members reported greater use of drought-tolerant crops, mulching, irrigation, mixed cropping and planting in buckets or sacks.

The women explained that savings-club resources enabled them to purchase drought-resistant seed, secure water supplies for irrigation and buy mulch or manure. These findings suggest that informal finance can help convert awareness of climate risk into concrete adaptation investments. Recent research provides direct support for linking savings groups with climate-adaptation interventions. Nabami et al. (2024) found that integrating climate-change training into savings groups increased meeting attendance and average loan sizes.

Figure 1. Adopted adaptation strategies to climate change impact on urban agriculture (% of total sample reporting)



Based on the sustainable livelihoods’ framework, strengthening the resources available to women can increase their ability to pursue livelihood strategies and improve livelihood outcomes (DFID, 1999). In this context, savings clubs can be understood as mechanisms that help women mobilize financial and social capital and convert these resources into adaptation investments.

Savings clubs provided resources for income diversification

Participants belonging to savings clubs reported using pooled funds to invest in small businesses, including poultry production, sewing, production of drinks such as freezits, and manufacturing detergents and toilet cleaners. Such diversification reduces dependence on agriculture and can provide alternative income during periods of drought or poor agricultural production.

One respondent stated:

"Funds generated from the club have helped me to commence a poultry business which is currently running swiftly amid of the tough economic environment in the country."

This finding is important because climate resilience is not necessarily achieved by improving agricultural production alone. For households whose livelihoods depend partly on urban agriculture, diversification into poultry, petty trade, sewing, food processing and other activities can reduce exposure to climate-related agricultural losses.

The finding is consistent with evidence that savings groups can support small-scale enterprise development and economic resilience (Lukwa et al., 2022). It also reflects the broader understanding of women's economic empowerment in which access to and control over productive resources can increase women's ability to pursue independent economic activities.

However, the sustainability of such enterprises depends on access to skills, markets, equipment and business-development services. Financial capital without adequate human and market capital may not generate sustained livelihood improvements. This is particularly relevant given that respondents in the present study identified a lack of business-management training as a major challenge.

Savings clubs provided social capital to help the household cope with drought

Beyond their financial role, savings clubs fostered social networks and forms of collective action. One respondent reported that her savings club consisted of five female heads of households in her neighbourhood and that members supported one another by sharing seeds, surplus produce and adaptation information.

She explained:

"If one of us has drought-resistant seeds of maize or of indigenous vegetables, she shares with all of us so we can plant them as a vital adaptation strategy."

She further explained that one member had shared seeds of the indigenous vegetable *mowa* (*Amaranthus hybridus*), helping members to increase household food security under changing climatic conditions.

Respondents also described the importance of savings groups in sharing information about efficient water use, early warnings about extreme weather and traditional knowledge related to drought adaptation. These findings demonstrate that the value of savings groups extends beyond the monetary value of savings and loans. They function as social institutions through which information, knowledge, resources and risk are collectively managed.

This finding is consistent with research showing that savings groups can create social capital and strengthen collective capacity. Lukwa et al. (2022) emphasize that informal savings groups in urban sub-Saharan Africa can contribute to social, economic and livelihood outcomes through mutual support and collective action. Similarly, research on savings groups and climate resilience in Dar es Salaam found that collective savings arrangements can contribute to household resilience to climate-related hazards through financial and social mechanisms (Panman et al., 2021).

The Zimbabwean findings therefore complement evidence from other African contexts by demonstrating how financial and social capital can interact in urban agricultural households. They also suggest that savings clubs

may serve as locally embedded institutions through which climate information and adaptation practices diffuse.

Challenges experienced

Despite the benefits identified by participants, important challenges persist. Key informants noted that participation in savings clubs is generally easier for women with relatively stable sources of income, potentially excluding the most economically vulnerable households. This creates a paradox: women who are most in need of financial support may be least able to meet regular savings contributions.

A second challenge is the lack of training in business management. Participants and key informants indicated that some income-generating projects failed because members lacked skills in budgeting, record-keeping, business planning and enterprise management. This suggests that strengthening savings clubs requires more than increasing the amount of capital available to members.

A third challenge concerns the informal nature of savings clubs. Although community trust and social relationships reduce the likelihood of fraud, the absence of formal regulation or institutional safeguards can expose members to financial losses. These concerns are particularly relevant when considering the scaling of informal savings groups. Lukwa et al. (2022) note that while savings groups can improve household welfare and financial inclusion, their informal nature can also create vulnerabilities related to governance, financial management and sustainability.

Study Limitations

Several limitations should be considered when interpreting the findings. The study is based on a relatively small sample of 68 female-headed households from the study area, and the households were selected through a non-probability sampling approach rather than a probability-based sampling procedure. Consequently, the findings should not be assumed to be statistically representative of all female-headed households in the study population or to all female-headed households in Zimbabwe. Nevertheless, the sample provides useful empirical insights into the experiences and circumstances of the female-headed households included in the study. The findings are therefore interpreted as indicative rather than fully representative of the wider population.

The study focuses specifically on female heads of households. Although this focus is appropriate to the research question, it does not capture the experiences of women who are not household heads, male-headed households or younger women who may face different barriers to financial inclusion.

These limitations do not negate the findings, but they are indicative that they should be interpreted as evidence of promising relationships and mechanisms. They also point to important opportunities for future research using larger samples, longitudinal designs and quasi-experimental approaches.

CONCLUSIONS AND RECOMMENDATIONS

In Zimbabwe, where climate change poses significant challenges to livelihoods, savings clubs are a valuable resource for improving the adaptive capacity of female-headed households practicing urban agriculture. This study has shown that female heads of households that are a member of a savings club showed significantly better access to physical assets and financial resources, both of which are critical for adapting to climate change. They were able to enhance food security from pooled resources and had access to emergency funds. Savings club resources allowed members to invest in climate adaptation strategies such as planting drought-resistant crops, using mulch, practicing mixed cropping, and using buckets or sacks for planting.

Beyond financial support, savings clubs fostered strong social networks. Members shared seeds, surplus produce, and adaptation tips. These interactions enhanced community resilience and facilitated the spread of climate-related knowledge, such as efficient water use and early warnings about extreme weather events.

Savings clubs also supported income diversification and livelihoods as women ventured into income generating projects such as poultry production, sewing and making of detergents. This is crucial in providing alternative source of income for food security and overall well-being especially during drought situation.

The findings of this study are broadly consistent with emerging evidence from other countries, while also highlighting the context-specific nature of informal finance and climate adaptation. In Tanzania, research on savings groups and urban resilience has highlighted their role in helping households cope with climate-related flooding, demonstrating that community savings can provide a form of financial resilience in urban settings (Panman et al., 2021). In Nigeria, Kouandou and Zeh (2024) similarly demonstrate that informal savings can help households smooth consumption following rainfall shocks.

The findings are also comparable with evidence from Ghana, where farmers have responded to climatic pressures through crop diversification and other adaptation strategies (Mensah et al., 2025).

Despite the many benefits, challenges persist. Participation in savings clubs is generally limited to women who have a steady source of income, excluding the most vulnerable like young female heads of households or more elderly female with larger dependents.

Additionally, the lack of formal business training has led to some failures in income-generating projects. The informal nature of savings clubs, while grounded in community trust, also leaves members vulnerable to fraud, although this risk is mitigated by close-knit member relationships.

However, barriers to entry and lack of formal training or protections limit their reach and long-term impact.

Based on the findings, the study proposes the following recommendations.

The government, city council or other support institutions such as microfinance institutions or NGOs should aim at strengthening these informal savings clubs since the clubs are built on community capacity that has great potential for sustainability. They can offer low-cost or community-based training tailored to women on entrepreneurship, budgeting, record-keeping, business planning and governance to ensure sustainability of their urban agriculture and projects. This could significantly enhance women's human capital and adaptive capacity.

The government and other development stakeholders could consider supporting savings clubs to expand access for more low-income women who currently cannot afford to join and contribute regularly. This can be done through external seed funding or matching grants to bring in the excluded households.

The government and other local development stakeholders should consider linking or integrating savings clubs to climate adaptation programs such as climate-smart agriculture programs by providing adequate subsidized inputs such as drought-resistant seeds, support towards water storage and irrigation investment and training on climate adaptation techniques. Training could cover drought-tolerant crops, water harvesting, efficient irrigation, mulching, soil management, mixed cropping and other locally appropriate practices. It is also important that dissemination of climate change information is done to savings clubs.

Savings clubs should be recognized and included in local municipal development plans and policies. Partnerships of savings clubs with local governments, agricultural departments, and disaster risk institutions can help align club activities with broader resilience efforts. Promotion of peer-to-peer knowledge exchange within and between savings clubs through established regular forums, or exhibition shows where members can exchange seeds, tips, and early warnings.

Savings club members could be encouraged to invest in climate-resilient businesses beyond agriculture by providing access to project equipment such as peanut making machine, sewing machines, market information, or revolving loans for projects like poultry farming, sewing, or food processing. Linking savings clubs with financial institutions can provide them an opportunity to access larger loans, and savings products which could assist members to invest in climate resilience.

Future research

Future research should move beyond cross-sectional comparisons and examine whether savings-club participation produces measurable improvements in climate resilience over time. Longitudinal studies could track changes in household assets, income, food security, agricultural productivity and adaptation investments before and after joining a savings club.

Comparative research across Zimbabwean cities and different types of savings groups would also be valuable. Such research could determine whether outcomes differ according to group size, contribution levels, governance arrangements, membership composition or the primary purpose of the group.

Experimental or quasi-experimental research would be particularly useful for testing whether combining savings groups with climate-adaptation training, matching grants or agricultural extension produces better outcomes than savings groups alone. This would help address the causality limitations of the current cross-sectional study and provide stronger evidence for policy.

Finally, research should investigate practical models for scaling community savings initiatives while maintaining their accountability, trust and local ownership. Particular attention should be given to policies that can help create an enabling environment in which these informal savings clubs can connect effectively with climate finance, agricultural extension, social protection, markets and municipal planning to strengthen household resilience.

Ethics Statement

In the study, ethical issues were handled in the following way. First, permission to undertake the study was obtained from the community leader, the Councillor of Dangamvura Ward 15. Secondly, ethics approval was secured from the Simon Fraser University Office of Research Ethics (SFU ORE) before commencing fieldwork. After receiving SFU ORE ethics approval, ethics clearance was sought from the Medical Research Council of Zimbabwe (MRCZ). After approval was granted by MRCZ, field work was undertaken. Written informed consent was obtained from key informants and survey participants before interviewing them. Participation was voluntary and all participants in the study were assured of the secrecy and confidentiality of the information. The data was managed in line with ethical considerations to ensure respondents' privacy, confidentiality and anonymity.

REFERENCES

1. Assan, E., Suvedi M., Olabisi, L. S., Allen, A. (2018). Coping with and Adapting to Climate Change: A Gender Perspective from Smallholder Farming in Ghana, *Environments* (5)86.
2. Ayanlade, A., Oluwaranti, A., Ayanlade, O. S., Borderon, M., Sterly, H., Sakdapolrak, P., Jegede, M.O., Weldemariam, L. F., Ayinde, A. F. O. (2022). Extreme climate events in sub-Saharan Africa: A call for improving agricultural technology transfer to enhance adaptive capacity, *Climate Services* 27.
3. Berhanu A. A., Ayele Z. B., Dagneu D. C., Fenta A. B., Kassie K. E., (2024) Smallholder farmers' coping strategies to climate change and variability: Evidence from Ethiopia, *Climate Services*, Volume 35.
4. Bryan, E., Alvi, M., Huyer S., Ringler, C. (2024). Addressing gender inequalities and strengthening women's agency to create more climate-resilient and sustainable food systems, *Global Food Security*, 40.
5. Chari, F., Ngcamu, B. S. (2022). Climate change and its impact on urban agriculture in Sub-Saharan Africa: A literature review, *Environmental & Socio-economic Studies* 10 (3), 22-32.
6. Chineka T. S., Mundau M., 2021, Savings groups and the COVID-19 pandemic in Zimbabwe: Critical assessment of the informal social protection scheme, *Journal of Social Development in Africa* Vol 36 (2): 63-86.
7. Climate Technology Centre and Network (CTCN). (2017). *Climate-Smart Agriculture Manual for Zimbabwe*, Denmark.

8. Department for International Development (DFID), 1999, Sustainable livelihoods guidance sheets, Department for International Development, London.
9. Dev, D.S., Manalo IV, J. A. (2023). Gender and adaptive capacity in climate change scholarship of developing countries: a systematic review of literature, *Climate and Development*, 15(10), 829-840.
10. Dube, T., Sibanda, S & Chiwara, P. (2021). Adapting peri- urban agriculture to climate change in Bulawayo, Zimbabwe: A qualitative assessment, *Cogent Social Sciences*, 7:1.
11. Dzoma, G. (2024). Why Zimbabweans Prefer “Rounds” (Mkando) to Formal Banking: A Deep Dive, *Zimpricecheck Insights*, https://zimpricecheck.com/market-intelligence/why-zimbabweans-prefer-rounds-mkando-to-formal-banking-a-deep-dive/?srsltid=AfmBOorbM5ad_wlJEKcwFX7sWrcDFDpWVXvotEkxxGgk3qFZR60_6pJP
12. Dzvimbo, M. A., Ncube C. T., Zhanda K., Mutanana N. (2022) *Climate Change and Poverty: Coping Strategies Adopted by Female-Headed Households in Zimbabwe*, Book Chapter in, *Climate Change Management Handbook of Climate Change Across the Food Supply Chain*, p. 369-379, Springer International Publishing.
13. EM-DAT and CRED/UCLouvain (2025) International disaster database, Available at <http://www.emdat.be>. Accessed 9 June 2025.
14. Flato, M., Muttarak, R., Pelser, A. (2017). Women, Weather, and Woes: The Triangular Dynamics of Female-Headed Households, Economic Vulnerability, and Climate Variability in South Africa, *World Development* (90), 41–62.
15. Gaisie, E., Adu-Gyamfi, A., Kufour Owusu-Ansah, J. K. (2022). Gender and household resilience to flooding in informal settlements in Accra, Ghana, *Journal of Environmental Planning and Management*, 65(8), 1390-1413.
16. Graney D., Perlik L. (2025), *Understanding the Impacts of Savings Groups on Women’s Economic Activity: Synthesis of Recent Literature*, Innovations for Poverty Action (IPA) Publication.
17. Gunhidzirai, C., (2023). Urban Agriculture and the attainment of Sustainable Development Goal 2 (Zero Hunger) in Zimbabwe, *International Journal of Development and Sustainability*, 12 (7), 286-302.
18. Hadebe L. B. and Mpofu J. (2013). Empowering women through improved food security in urban centers: A gender survey in Bulawayo urban agriculture, *African Educational Research Journal*, Vol. 1(1), pp. 18-32.
19. Hungwe C., (2006). Urban agriculture as a survival strategy: An analysis of the activities of Bulawayo and Gweru urban farmers (Zimbabwe), *Urban Agriculture Notes* published by City Farmer, Canada's Office of Urban Agriculture.
20. Intergovernmental Panel on Climate Change (IPCC)., (2022). Chapter 8: Poverty, livelihoods and sustainable development. In *Climate Change 2022: Impacts, Adaptation and Vulnerability*. Cambridge University Press.
21. IPCC, (2008). *Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, Pachauri, R.K and Reisinger, A. (eds.)]. IPCC, Geneva, Switzerland, 104 pp.
22. Kouandou, A., & Zeh, I. P. (2024). Insuring consumption against shocks: The role of informal savings in Nigeria. *Food Policy*, Volume 129.
23. Lukwa, A.T., Odunitan-Wayas, F., Lambert, E.V., Alaba, O.A. (2022). Can Informal Savings Groups Promote Food Security and Social, Economic and Health Transformations, especially among Women in Urban Sub-Saharan Africa: A Narrative Systematic Review. *Sustainability*, Volume 14.
24. Magwegwe, E.; Zivengwa, T.; Zenda, M. (2024). Adaptation and Coping Strategies of Women to Reduce Food Insecurity in an Era of Climate Change: A Case of Chireya District, Zimbabwe. *Climate*, Volume 12.
25. Mapfumo, E., Sibindi, A.B. (2025). The Role of Informal Finance in Financing Micro-Small-Medium-Enterprises in Zimbabwe. In: Sibindi, A.B. (eds) *Sustainable Finance and Insurance in Africa*. Advances in African Economic, Social and Political Development. Springer, Cham.
26. Mensah, S. O., Osei-Acheampong, B., Jacobs, B., Cunningham R., & Akoto, A. B. (2025). Smallholder farmers’ climate change adaptation in Ghana: A systematic literature review and future directions, *Journal of Environmental Management*, Volume 384.

27. Mesfin D., Simanana B., Belay A., Schmiedel U. (2020). Assessing the Adaptive Capacity of Households to Climate Change in the Central Rift Valley of Ethiopia, *Climate* Vol. 8(10).
28. Mudimu G. (1996), Urban agricultural activities and women's strategies in sustaining family livelihoods in Harare, Zimbabwe, *Singapore Journal of Tropical Geography*, Vol.17 (2),179-194.
29. Mushawatu, Z., Al Jazeera. (2024). The Hidden Dangers Zimbabwe's Informal Savings Clubs, in *The New Zimbabwe*, 7 July 2024.
30. Naazie, G. K., Agyemang, I., & Tampah-Naah, A. M. (2024). Characterization of urban agriculture and farmers' climate change adaptation: The case of Urban Wa, Ghana. *Discover Sustainability*, Volume 5.
31. Nabami, A. M., Petre, A., & Mersland, R. (2024). Impact of climate change training intervention in savings groups. *Journal of International Development*, 36, 2047–2062.
32. Ndlovu, E., Prinsloo, B., Le Roux, T. (2020). 'Impact of climate change and variability on traditional farming systems: Farmers' perceptions from south-west, semi-arid Zimbabwe', *Jambá: Journal of Disaster Risk Studies* 12(1).
33. Nkrumah, B. (2018). Edible backyards: Climate change and urban food (in)security in Africa. *Agriculture Food Security*. 7 (1), 1–5.
34. Nyabeze, K., Chikoko, W. & Nyabeze, T. (2025). The role of social protection in the informal sector in Zimbabwe during the COVID-19 pandemic. *Discover Global Society* 3, 16.
35. Nyathi, D., Mlambo, V.H. (2024). Urban Agriculture and Climate Change: Ensuring Household Food Security Through Building Resilience in Bulawayo, Zimbabwe. In: Leal Filho, W., Sima, M., Lange Salvia, A., Kovaleva, M., Manolas, E. (eds) *Initiatives on Climate Change Education and Research*. Springer, Cham.
36. Olivier, D. W. (2018). Urban agriculture promotes sustainable livelihoods in Cape Town, *Development Southern Africa*, Vol. 36 (1), 17-32.
37. Panman, A., Madison I., Nyambiri, N. K., Jean-Benoît, F. (2021). Saving Up for a Rainy Day? Savings Groups and Resilience to Flooding in Dar es Salaam, Tanzania, *Urban Forum*, Volume 33, pages 13-33.
38. Qualtrics, n.d. <https://www.qualtrics.com/articles/strategy-research/calculating-sample-size/>
39. Theron, S. N., Midgley, S., Hochrainer-Sigler, S., Tramberand, S., Walker S. (2023). Agricultural resilience and adaptive capacity during severe drought in the Western Cape, South Africa, *Regional Environmental change* Vol. 23.
40. United Nations Development Programme (UNDP). (2024a). Rural women rising: How climate-smart agriculture is empowering women farmers and bridging gender divides in southern Zimbabwe.
41. UNDP. (2024b). Interim evaluation of the "Building Climate Resilience of Vulnerable Agricultural Livelihoods in Southern Zimbabwe" project.
42. UNDP. (2017). Guidance Note for the Application of the Sustainable Livelihoods Framework in Development Projects.
43. Zezza, A., Tasciotti, L. (2010). Urban agriculture, poverty, and food security: Empirical evidence from a sample of developing countries, *Food Policy* Vol. 35, 265 -273.
44. Zimbabwe National Statistics Agency (ZIMSTAT). (2022). 2022 Population and Housing Census: Preliminary report on population figures, 2022 Census, Harare.
45. Zimbabwe National Statistics Agency (ZIMSTAT). (2019). Understanding Gender Equality in Zimbabwe Women and Men in Zimbabwe Report 2019, Harare.
46. Zimusi, L., Moyo, G., (2024). "An Analysis of the Role of Savings Groups in Promoting Resilience of Rural Semi-arid Regions' Women to Drought in Zimbabwe: Evidence from Umzingwane District," Springer Books, in: David Mhlanga and Mufaro Dzingirai (ed.), *Fostering Long-Term Sustainable Development in Africa*, pages 245-265, Springer.