fsdZambia
Expanding Financial Inclusion

Impact of the 2023/24 Drought on Smallholder Farmers in Zambia

Survey Report

January 2025

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About FSD Zambia Zambian

Financial Sector Deepening Limited (FSD Zambia) is a Zambian organisation working closely with key players throughout the economy to ensure that all Zambians are financially healthy, particularly the most excluded and underserved. We help rural families, women, youth, low-income people, and other households in Zambia to understand and access a wide range of sustainable, comparable and affordable financial services. To expand financial inclusion, we collaborate with both public and private sector institutions to make financial markets work better. FSD Zambia enhances trust between clients and suppliers of financial services by increasing their understanding, expanding innovation, and lowering costs. FSD Zambia enjoys the active support of financing partners UK Aid, Swedish Sida, Comic Relief/Jersey Overseas Aid and Rural Finance Expansion Programme (RUFEP). More information is available on our website, www.fsdzambia.org

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List of acronyms

CAPI	Computer-Assisted Personal Interviewing
FSD Zambia	Financial Sector Deepening Zambia
GDP	Gross Domestic Product
ICIS	Inclusive Crop Insurance Scheme
ILIP	Inclusive Livestock Insurance Pilot
IPA	Innovation for Poverty Action
JOA	Jersey Overseas Aid
ODK	Open Data Kit
PPI	Poverty Probability Index
SHFs	Smallholder farmers

Executive Summary

During the 2023/2024 agricultural season, Zambia encountered its driest season in over four decades, resulting in substantial crop failures, elevated livestock mortality rates, and heightened poverty levels. Over nine million individuals across 84 of the 117 districts were affected. The regions most impacted were the Central, Eastern, Southern, and Western provinces, which account for over 58% of the annual national corn production and include over 76 percent of cattle. The agriculture sector's proportion to Zambia's Gross Domestic Product (GDP) had diminished during the past decade, declining from 9.4% in 2010 to 3.39% in 2022. The output of staple crops, including maize, millet, sorghum, and rice, underwent a significant reduction in the 2023/2024 agricultural season because of the drought. Maize output decreased by 54%, from 3,261,685 metric tonnes in the 2022/2023 season to 1,511,143 metric tonnes in the 2023/2024 season. The nation's yearly inflation rate rose from 12.9% to 13.2% in January 2024, primarily due to an increase in food inflation, which reached 14.2% in December 2023. This inflation rendered it progressively challenging for a substantial segment of the population, notably smallholder farmers, to procure inputs and essentials commodities.

FSD Zambia executes diverse initiatives within its Inclusive Insurance Thematic area to bolster smallholder farmers' resilience against climate change. These initiatives encompass enhancing access to crop and livestock insurance, increasing awareness regarding insurance, and promoting climate-smart agricultural practices. FSD Zambia is presently implementing two initiatives: the Inclusive Crop Insurance Scheme (ICIS) and the Inclusive Livestock Insurance Pilot (ILIP), benefiting 1,533 farmers.

In light of the drought encountered during the 2023/4 agricultural season, FSD Zambia conducted this research to evaluate the effects of the drought on smallholder farmers receiving support from the organisation`s initiatives. The study's objectives included: examining the effect of drought on overall agricultural productivity for smallholder farmers; assessing the economic consequences of drought on smallholder farmers. Identify techniques (Adaptation and Coping techniques) employed by farmers to mitigate the impacts of climate change. Examining whether the various mitigations enacted prior to and during this drought have enhanced the resilience of smallholder farmers and affected their readiness for future climate occurrences; Examining the several types of assistance provided by governmental, private, and non-governmental entities to smallholder farmers.

Some of the key findings of the study were as follows:

- **Widespread Impact:** Nearly all smallholder farmers surveyed reported being affected by the drought, with 96% experiencing severe impacts.
- **Crop Losses and Food Insecurity:** The drought led to substantial crop losses, particularly maize, the primary staple food. This resulted in food scarcity for many households and threatened food security for the entire nation.
- **Reduced Income and Financial Hardship:** The drought significantly reduced household incomes, forcing many farmers to sell assets and borrow money to cope with the crisis. This exacerbated existing poverty, with 72% of farmers classified as poor.

- **Limited Preparedness:** Most farmers had not taken proactive measures to prepare for the drought, highlighting the need for improved early warning systems and capacity building.
- **Low Insurance Uptake:** Despite awareness of insurance as a coping mechanism, only 18% of smallholder farmers had insurance, and among those who did, only half received payouts due to awareness and complexity of the claims process.
- **Limited Government Support:** While some government support was provided, it was often insufficient and inadequately targeted. Many farmers did not receive any support or were dissatisfied with the level of assistance they received.

Considering the findings of the study, some of the key recommendations include the following

1. **Strengthen Early Warning Systems:** Improve early warning systems to provide timely information about drought conditions, allowing farmers to take proactive measures.
2. **Promote Climate-Smart Agriculture:** Invest in climate-smart agricultural practices, such as drought-resistant crops, water conservation techniques, and diversification, to enhance resilience to climate shocks.
3. **Expand Access to Insurance:** Increase access to and awareness of agricultural insurance, particularly index-based insurance, which can provide financial protection against drought losses. Simplify claims procedures and improve payouts to encourage greater uptake.
4. **Strengthen Social Safety Nets:** Enhance social safety nets, such as cash transfers and food aid programs, to provide targeted support to vulnerable households during drought and other crises.
5. **Empower Women Farmers:** Address the specific vulnerabilities of women farmers, who are often disproportionately affected by droughts. Provide them with access to training, resources, and financial support to increase their resilience.
6. **Improve Coordination:** Strengthen coordination among government agencies, NGOs, and international organisations to ensure a more efficient and effective response to droughts and other climate-related shocks.
7. **Invest in Research and Development:** Invest in research and development to develop drought-tolerant crop varieties, improve water management technologies, and explore innovative insurance products.

1. Introduction

Zambia experienced its driest agricultural season in over forty years, leading to substantial crop losses, higher livestock mortality rates, and increased poverty levels. According to Government crop assessment data, more than nine million people across 84 of the 117 districts had been impacted. The 2023/2024 rainfall season was characterised by a late onset, extended dry spells, and elevated temperatures. According to the Zambia Meteorological Department, the most affected regions were Central, Eastern, Southern and Western provinces of the country. These provinces have contributed approximately 58% of the annual national maize crop production over the past five years. These provinces also host over 76% of livestock, that experienced decreased access to pasture and water. This situation disrupted farming activities and adversely affected the energy sector, contributing to rising inflation.

The country's annual inflation rate increased from 12.9% to 13.2% in January for the seventh consecutive month since July 2023, while the year-on-year inflation was at 13.2% in February 2024, higher than in February 2023 (9.6%). The rising inflation had mainly been driven by the rise in the food inflation which reached its peak in December 2023. Annual food inflation for December 2023 was recorded at 14.2% compared to 13.7% in the previous month. This meant on average, prices of food items increased by 14.2% between December 2022 and December 2023. A significant portion of the population (including smallholder farmers) felt the impact of this inflation, making it increasingly difficult for them to afford inputs and necessities.

As part of its broader financial inclusion agenda, FSD Zambia has over the years implemented various interventions to enhance smallholder farmers' resilience to the effects of climate change. These efforts primarily focus on improving farmers' access to and utilisation of both crop and livestock insurance through collaboration with insurance providers to develop suitable and responsive products, raising awareness about insurance to enhance knowledge and uptake, and encouraging the adoption of climate-smart agricultural practices. Currently the organisation is implementing two projects; the Inclusive Crop Insurance Scheme (ICIS) and the Inclusive Livestock Insurance Pilot (ILIP). The two programs are being funded by Jersey Overseas Aid (JOA). The project has so far reached to 1533[1] farmers i.e. 1500 (ICIS) and 33 (ILIP).

In view of the drought experienced during the 2023/4 farming season, FSD Zambia conducted a study to assess the impact[2] of the drought on smallholder farmers benefiting from the organisation's interventions. The 2023/4 drought in Zambia significantly affected smallholder farmers, impacting their livelihoods, agricultural output, and access to services, including social and financial support. Consequently, this had implications for vulnerable groups supported by FSD Zambia. The drought's effects could be both detrimental (decreased food production, diminished income and savings, heightened credit risk, and asset depletion) and beneficial (increased demand for insurance and government assistance).

1 These have been onboarded and subscribed the insurance product

2 Impact is used very loosely throughout this document to mean various effects of the drought. Hence, this study will not conduct a full impact assessment which may require a detailed methodology such as a Randomized Control Trial.

1.1. Background

The country's food security is mainly considered to be at risk due to droughts, which are more prevalent in many regions of the globe because of climate change. Despite Zambia's relative abundance of land in relation to its population, a substantial portion of its arable land is in a semi-arid region that is frequently affected by drought. The agricultural sector's vulnerability to drought-related effects may be attributable to the country's scarcity of irrigated cultivation land. Subsistence agriculture that is rain-fed is the primary source of income for the remaining population. Zambia is in a precarious position to address drought impacts due to the limited public resource endowments and rain-fed agriculture. Poverty is even more pronounced in rural areas where many small holders are located, further reducing their ability to cope with the effects of the drought.

Zambian agriculture features a three-tier system: smallholder, emergent, and commercial farmers. Although many Zambian households are smallholder farmers and possess less than 5 hectares of land and employ basic and somewhat relying on traditional farming technology, most emergent and commercial farmers cultivate 20-150 hectares of land and employ mechanised farming techniques. Maize and cash crops are cultivated on over 1,000 hectares of land by a dozen large corporate farms that employ a highly mechanised production technique, contracted labour, and an advanced irrigation system. In the past, the agricultural sector has been acknowledged as a significant contributor to the Zambian economy. However, its contribution to the country's GDP has decreased over the past decade, from 9.4% in 2010 to 3.39% in 2022.

Maize, millet, and sorghum were among the commodities that suffered substantial losses because of the drought. When compared to the 2022/23 farming season, the production of staple crops, such as maize, millet, sorghum, and rice, experienced a substantial decline in the 2023/24 farming season, as indicated by the Crop Forecast Survey conducted by the Ministry of Agriculture and the Zambia Statistics Agency. The primary cause of the decline was the impact of drought on the production of maize, which is the primary staple diet and accounts for over 90% of cereal production. For instance, maize experienced a significant decline (54%) from 3,261,685 metric tonnes in the 2022/23 season to 1,511,143 metric tonnes in 2023/24.

The livelihoods of subsistence farmers are significantly impacted by drought, a recurring and intensifying phenomenon in Zambia. These farmers, who are the foundation of the nation's agricultural sector, are particularly susceptible to the detrimental consequences of extended droughts. Zambia's agricultural sector is fundamentally supported by smallholder farmers, who make substantial contributions to rural livelihoods and food security. Nevertheless, the smallholder farmers are confronted with a multitude of challenges, such as the increasing frequency of droughts in recent years with the most recent drought experienced during the 2023/24 farming season.

1.2. Study rationale

Drought, which is further exacerbated by climate change, is a substantial hazard to smallholder farmers in Zambia, as was evident earlier. These farmers, who are the foundation of the nation's agricultural sector,

are exceedingly susceptible to the detrimental consequences of extended droughts, which encompass economic hardship, food insecurity, and diminished crop yields. It was essential to have a thorough comprehension of the effects of drought on smallholder farmers in order to develop effective strategies that would contribute to both adaptation and mitigation efforts, thereby reducing the negative consequences and increasing smallholder farmers' resilience.

1.3. Significance of the study

This research offers valuable insights into the intricate interplay between drought, subsistence agriculture, and rural livelihoods in Zambia. The results would be used to develop evidence-based strategies that would promote sustainable agriculture, mitigate the effects of drought, and build resilience. Specifically, the following were some of the contributions expected as a result of this research:

- Provide evidence-based insights to inform the development of climate-smart agricultural policies and programs.
- Identify vulnerable groups and regions to tailor interventions and support services. Such services may include government support and financial services such as insurance; and
- Since the results will not be limited to FSD Zambia, the study would also contribute to the knowledge management base in furthering understanding drought impact on farming.

Furthermore, the study aimed to provide FSD Zambia with an in-depth understanding of how its interventions helped cushion the effects of the drought experienced by farmers during the 2024/25 farming season.

1.4. Study limitations

As with any quantitative or qualitative survey, the responses provided by participants were influenced by their thoughts at the time of the interview. Consequently, it is important to emphasize that the findings of this survey do not offer conclusive determinations regarding the effects of the 2023/24 drought on smallholder farmers (SHFs). Instead, the primary objective was to document the experiences of SHFs during the drought, including the coping strategies they employed and the support they received from the Government and other stakeholders.

The findings may help inform the design of interventions, such as inclusive insurance, to assist smallholder farmers in adapting to and mitigating the impacts of climate change. However, several limitations were considered:

- While the study presented descriptive statistics to highlight certain effects, definitively establishing a causal link between the drought and changes in various aspects of smallholder farmers' lives was complex and potentially beyond the study's scope.
- The impact of the drought varied across different regions of Zambia, and findings from one area could not be generalized to the entire country. This study focused only on three provinces—Central, Eastern, and Southern.

- The full impact of the drought on financial sector deepening may take time to unfold, requiring further study over an extended period. A study conducted shortly after the drought might not capture the long-term consequences. Therefore, this study primarily examined short-term effects rather than long-term impacts.

1.5. Study goal and objectives

To understand the impact of drought on smallholder farmers, further research was needed. A key question for research and policy was how smallholder farmers who are supported by FSD Zambia navigated through the impact of the drought as experienced during the 2023/24 farming season. Hence, the goal and objectives of the study are shown in **Figure 1.**

Figure 1: Goal and objectives of the study

Goal

Assess the effects/impact of the 2023/4 drought on the livelihood of smallholder farmers supported by FSD Zambia and the coping mechanism employed.

OBJECTIVES OF THE STUDY

- Investigating the impact of drought on overall agricultural productivity for smallholder farmers (here we looked at output (quantity and quality of harvest), specifics crop mostly affected, including impact on animal farming)
- Investigate the Economic impact of the drought on smallholder farmers. The effects included financial inclusion, access to basic goods and services, and consumption.
- Identify strategies (Adaptation and Coping Strategies) farmers were using to cope with effects of climate change (climate smart agricultural practices, insurance etc.).
- Investigate whether the different mitigations that have been implemented pre and during the drought had strengthened resilience of smallholder farmers and influenced their preparedness for future climate events.
- Investigate the various forms of support (social protection and empowerment) offered by government, private, and non-governmental organisations to smallholder farmers, and assess their effectiveness in managing the impacts of drought.

2. Effects of climate change on rural households

In recent years, Zambia, like numerous other countries in the Southern African region, has experienced an increase in extreme weather conditions, including droughts, dry periods, floods, and erratic rainfall. The climate variations in the region have resulted in all of these. The effects of climate change are a significant adversary that rural households must confront, as most of them rely on agriculture for survival. Several studies have been conducted within Zambia and the surrounding regions to understand the various impacts of the drought on smallholder farmers.

In 2021, Alfani et al[3]. performed a study to assess farmers' responses to El Niño-induced droughts in Zambia. The study was aimed at determining the extent to which sustainable land management techniques and livelihood diversification methods have mitigated the effects of the El Niño-induced drought in Zambia. This study was conducted in conjunction with the Rural Agricultural Livelihoods Surveys, which were structured as a panel study, with high-resolution rainfall data at the ward level spanning 34 years. The favoured methodology permitted the management of time-invariant unobserved heterogeneity to analyse the effects of shocks such as El Niño, which are anticipated to increase in frequency and severity due to climate change. The study's principal findings indicated that maize yields were significantly diminished and that household incomes were only somewhat safeguarded from the shock due to mitigation efforts such as diversification techniques.

A study was undertaken in Zambia examining coping techniques among smallholder farmers, namely in the Luangwa district by Chipatu and Kumbwa (2021)[4]. The perception of drought hazard among small-scale farmers was evaluated to attain this objective. The impact of drought on the livelihoods of small-scale farmers was also examined. The research identified drought mitigation measures utilised by small-scale farmers in Zambia's Luangwa province. The research constituted a critical realism case study employing qualitative approaches. A semi-structured interview guide was employed with disaster management officers, agricultural supervisors, town planners, and extension officers, while a focus group discussion was held with small-scale farmers. Observations of agricultural practices on smallholdings were conducted. The research determined that small-scale farmers in Luangwa district utilised many strategies to mitigate drought, including wild food harvesting, income-generating activities, traditional farming techniques, and relief food distribution. The report recommends the implementation of environmental education for drought mitigation. Environmental education would serve as a catalyst for the integration of many knowledge systems, including traditional and contemporary science, since enhanced understanding would assist farmers in addressing the anticipated effects of drought.

[3] Alfani, F., Arslan, A., McCarthy, N., Cavatassi, R., & Sitko, N. (2021). Climate resilience in rural Zambia: evaluating farmers' response to El Niño-induced drought. Environment and Development Economics, 26(5-6), 582-604.

[4] Chipatu, L., & Kumbwa, M. N. (2021). Drought Coping among the Small-Scale Farmers of Luangwa District in Zambia. Multidisciplinary Journal of Language and Social Sciences Education (2664-083X, Online ISSN: Print ISSN: 2616-4736), 4(2), 68-75.

3. Study methodology

The detailed methodological procedures followed in the study are outlined in the subsequent sections.

3.1. Study Design

A mixed-methods study methodology was utilised to thoroughly examine the effects of drought on smallholder farmers in Zambia. This methodology integrated quantitative and qualitative techniques to offer a comprehensive grasp of the intricate topic. The proposed research strategy primarily utilised a

quantitative technique to comprehensively answer the selected research issues, supplemented by qualitative methods for further in-depth analyses. A stratified random sampling method was employed to choose representative samples from various provinces in Zambia as earlier highlighted in section 2.4. Structured questionnaire was used to gather data on household demographics, farming practices, income sources, food security, and coping strategies.

3.2. Study population and sample

As highlighted earlier, only FSD Zambia-supported smallholder farmers (SHFs) were part of the study, although complemented by farmers who were not supported by FSD Zambia. This was done to compare the overall effects and see if farmers who had accessed and were utilising financial products and services could easily adapt to the impact of climate change. The study was conducted at the individual farmer level, and as such, sampling targeted existing SHFs. As of December 2024, there were 1,533 SHFs drawn from FSD Zambia intervention. To guarantee representation, every FSD Zambia supported SHF had an equal chance of selection. Of the 675 SHFs that were part of the study, the distribution is shown in **Table 1.**

Table 1: Sample distribution

Level		FSDZ clients	Non FSDZ clients
Province	Central	339	336
	Eastern	321	354
	Southern	325	350
Sex	Female	318	357
	Male	338	338
Overall		328	347

3.3. Data collection

The research team utilised Computer-Assisted Personal Interviewing (CAPI) for data gathering, facilitated by the Open Data Kit (ODK) platform known as kobocollect. The data collection tool was internally created by the FSD Zambia Analytics team. All interviews were performed by telephone communication. FSD Zambia has established a database of clients and their contact information to improve monitoring capabilities.

4. Characteristics of smallholder farmers

Given the critical role that SHFs play in food production and rural livelihoods, it was imperative to understand their characteristics to evaluate the effects of the drought and to develop appropriate policies and interventions that would promote their well-being and productivity. Sociodemographic, income and expenditure, poverty classification (poverty probability index), financial health, and farming features are some of the crucial SHFs aspects that are described in this section of the report.

4.1. Socio - demographic

The study results showed a higher proportion of male farmers (52%) compared to female farmers (48%), despite the Zambian population being predominantly female. At the provincial level, the sex distribution varied significantly, with Central Province exhibiting a higher number of female SHFs compared to males, although both Eastern and Southern Provinces conform to the general patterns. The sex distribution of smallholder farmers supported by FSD Zambia is about equal. See **Figure 2.**

Figure 2: Sex distributions of smallholder farmers (%)

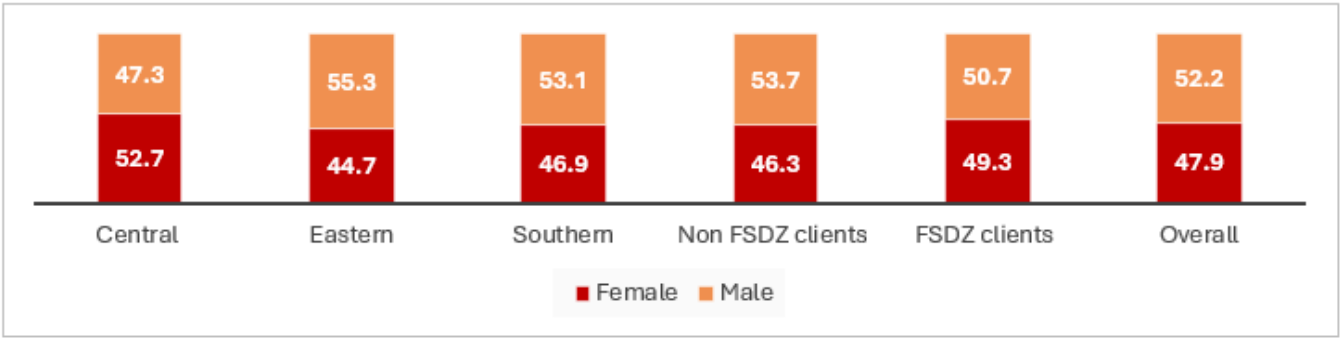
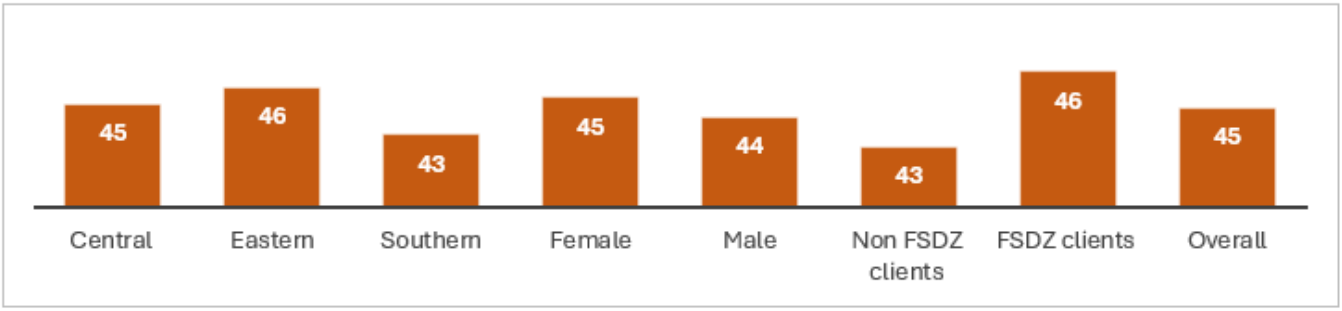


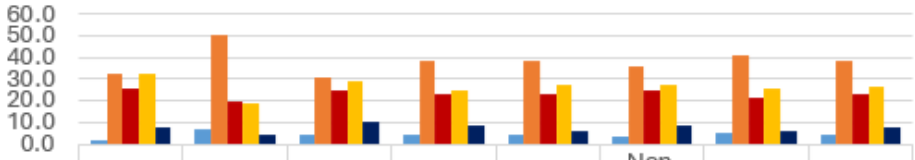
Figure 3 illustrates that the average age of SHFs serving as the primary respondents for this study was 45 years, with minor variations seen at the provincial level, by gender, and according to client type. Female farmers exhibited a marginally higher average age than their male counterparts, although smallholder farmers from the Southern province possessed a lower average age compared to those from the Central and Eastern provinces.

Figure 3: Average age of smallholder farmers (Years)



The majority of SHFs had achieved either primary or junior secondary education (62%), while a minority had never attended school (4%). The distribution of educational attainment was similar at the provincial level, categorised by sex and client type, as illustrated in **Figure 4.**

Figure 4: Education attainment (%)

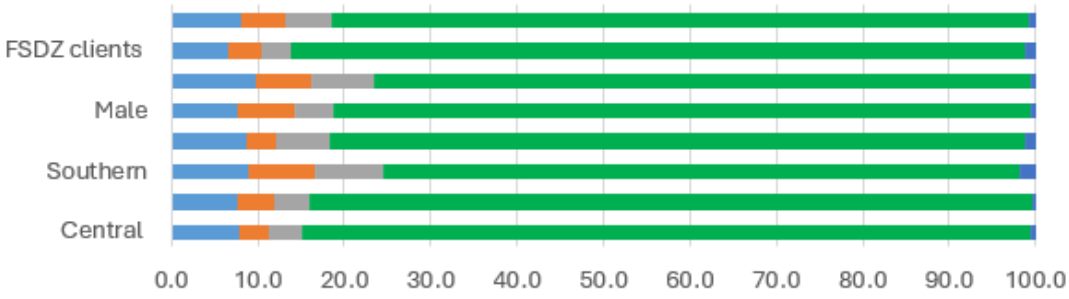


	Central	Eastern	Southern	Female	Male	Non FSDZ clients	FSDZ clients	Overall
Never been to school	2.0	6.5	4.5	4.3	4.6	3.4	5.5	4.4
Primary (Grade 1 - 7)	32.7	50.8	30.8	38.7	38.6	36.3	40.9	38.7
Junior Secondary (Grade 8 - 9)	25.4	19.5	25.0	23.2	23.0	24.7	21.6	23.1
Senior Secondary (Grade 10 - 12)	32.2	19.1	29.0	25.1	27.6	27.1	25.7	26.4
Tertiary (Craft certificate, Diploma, degree and higher)	7.8	4.1	10.7	8.7	6.3	8.5	6.3	7.4

4.2. Income and expenditure

The study results indicated that farming was the primary source of income for the respondents, with nearly 81 percent of the smallholder farmers reporting that they sustain their livelihoods through agricultural activities. A lesser percentage of SHFs indicated that small businesses constituted their primary source of income. Refer to **Figure 5.**

Figure 5: Main source of income/livelihoods (%)

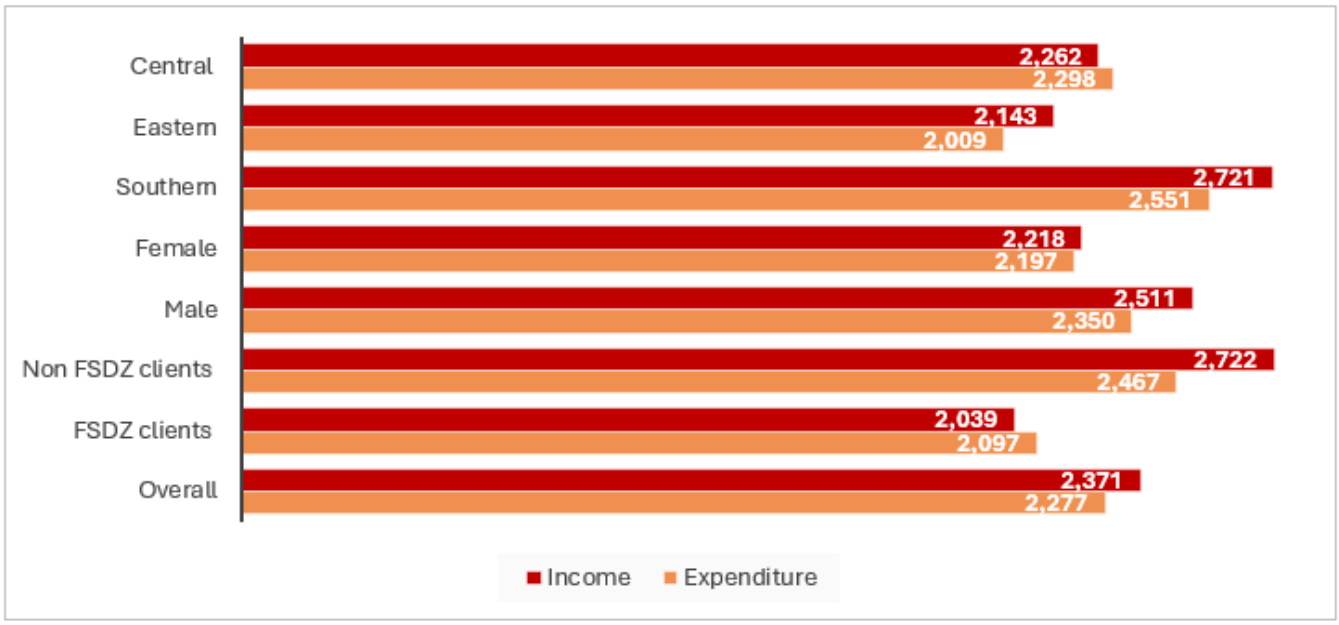


	Central	Eastern	Southern	Female	Male	Non FSDZ clients	FSDZ clients	Overall
Business	7.8	7.7	8.9	8.7	7.7	9.8	6.6	8.2
Casual labor	3.4	4.1	7.6	3.4	6.5	6.4	3.8	5.0
Employment	3.9	4.1	8.0	6.2	4.6	7.3	3.5	5.3
Farming	84.4	83.7	73.7	80.5	80.7	75.9	85.0	80.6
Receives money from relatives	0.5	0.4	1.8	1.2	0.6	0.6	1.2	0.9

In general, and categorized by province, gender, and client type, smallholder farmers (SHFs) tended to expend slightly less than their monthly income, suggesting a degree of financial discipline. The average

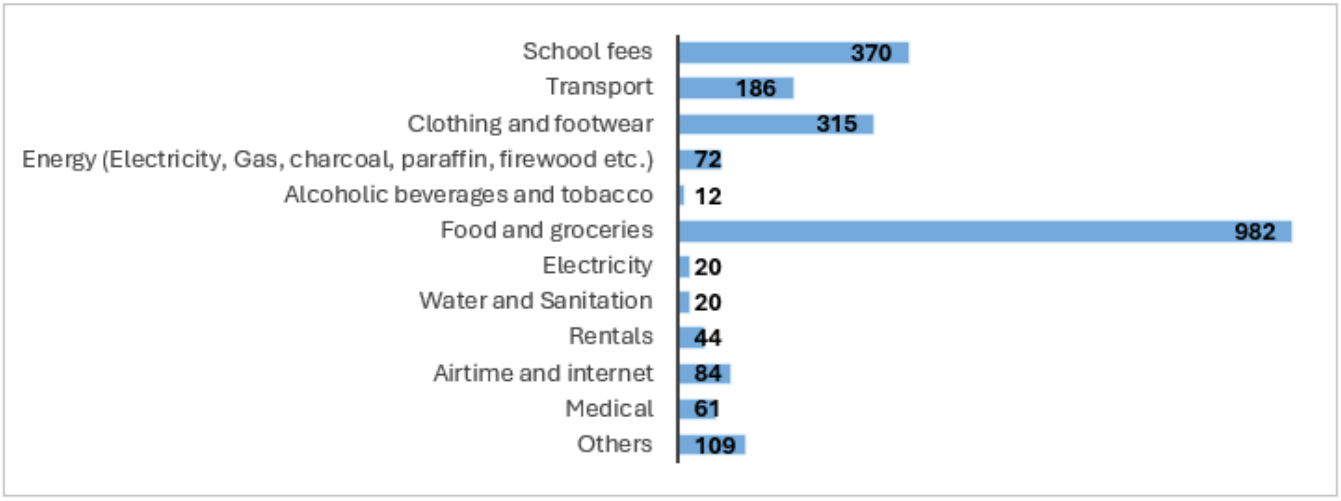
monthly expenditure was ZMW 2,277, while the average income was ZMW 2,371. SHFs in Southern Province generally reported a higher average monthly income compared to those in Central and Eastern Provinces. Additionally, males had a higher average monthly income than females, a trend that has been consistently documented in most socio-economic studies in Zambia. See **Figure 6.**

Figure 6: Average monthly income and expenditure (ZMW)



In monthly expenditure allocations, food and groceries constituted the largest portion (43%), followed by school fees, clothing and footwear, and transportation. The minimal expenditure allocations were noted for commodities including alcoholic beverages, energy, and water and sanitation services. Refer to **Figure 7**.

Figure 7: Expenditure category (ZMW)



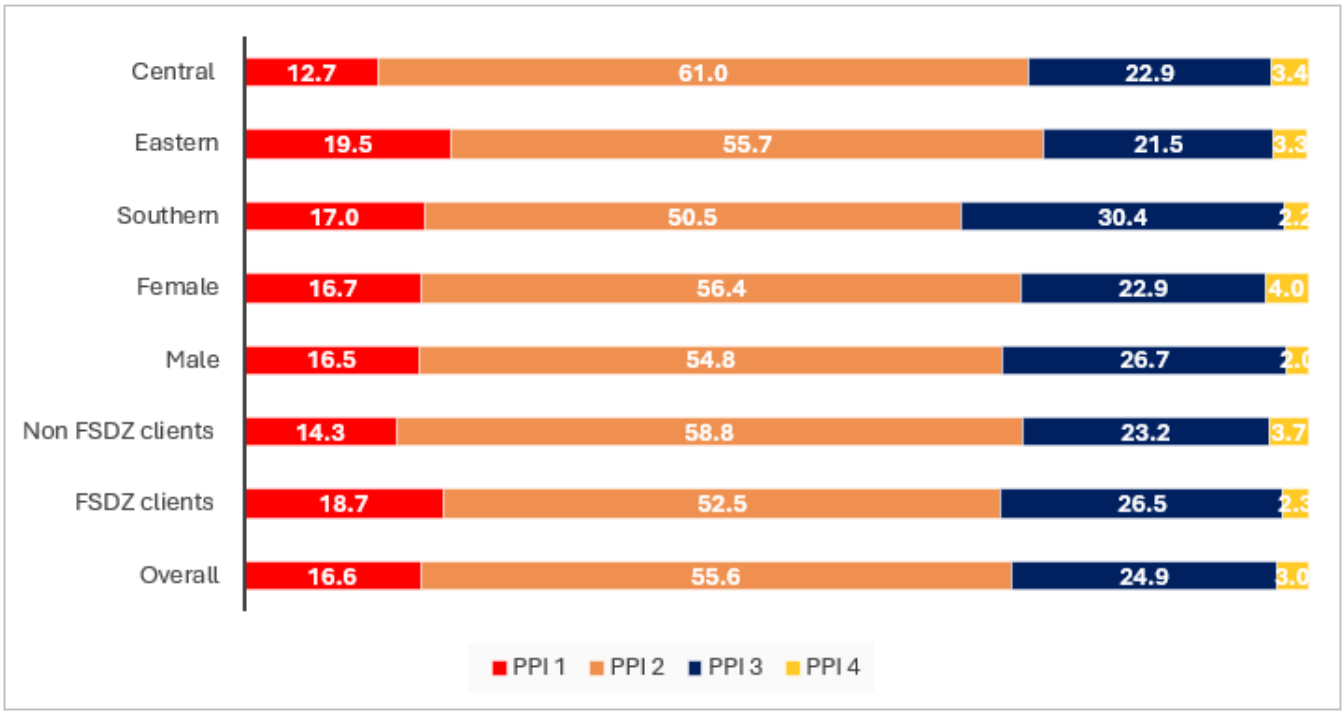
4.3. Poverty probability index

The Poverty Probability Index (PPI) is a tool utilised by organisations and enterprises to evaluate the probability that a household falls below the poverty threshold. It is engineered to be statistically robust while remaining user-friendly, rendering it advantageous for diverse applications. According to Innovation for Poverty Action (IPA)[5], the PPI is both statistically robust and user-friendly. The PPI tool is founded on a standardised set of 10 questions that are benchmarked against a country's poverty metrics. Individuals are categorised into five quintiles based on their PPI score: PPI 1 (Poorest), PPI 2 (Poor), PPI 3 (Middle), PPI 4 (Rich), and PPI 5 (Richest). PPI is an essential instrument for understanding and tackling poverty. Its clarity and precision render it an indispensable resource for organisations and enterprises such as FSD Zambia striving to enhance the lives of the financially underserved and unserved population who constitute a significant portion of those living in poverty in the country.

Figure 8 illustrates that a significant proportion of SHFs (72%) were facing poverty, a finding that aligns with the results from the more comprehensive 2022 Living Conditions Monitoring Survey (LCMS), which reported a nationwide poverty incidence of 78 percent. The survey results indicated that smallholder farmers in the Eastern Province (75%) were suffering higher levels of poverty compared to those in the Central Province (73%) and Southern Province (67%). Moreover, females and non-FSD Zambia clients were more prone to belong to the poorest (PPI 1) and poor (PPI 2) households.

[5] https://www.povertyindex.org/about-ppi

Figure 8: Poverty probability index (%)



4.4. Financial health

Financial health is an assessment of one `s overall financial well-being. It involves more than mere monetary possession; it includes capacity to handle money judiciously, fulfil present and future financial commitments, and endure unforeseen financial disruptions. Several variables are evaluated in assessing financial health, including expenditure, savings, borrowing, and planning. This survey aimed to assess the financial health of SHFs in terms of their capacity to utilise financial services, handle everyday affairs, mitigate risks, and invest for the future. The study concentrated on three dimensions: the capacity to handle daily finances, the ability to mitigate risk, and the capability to invest in livelihoods and the future.

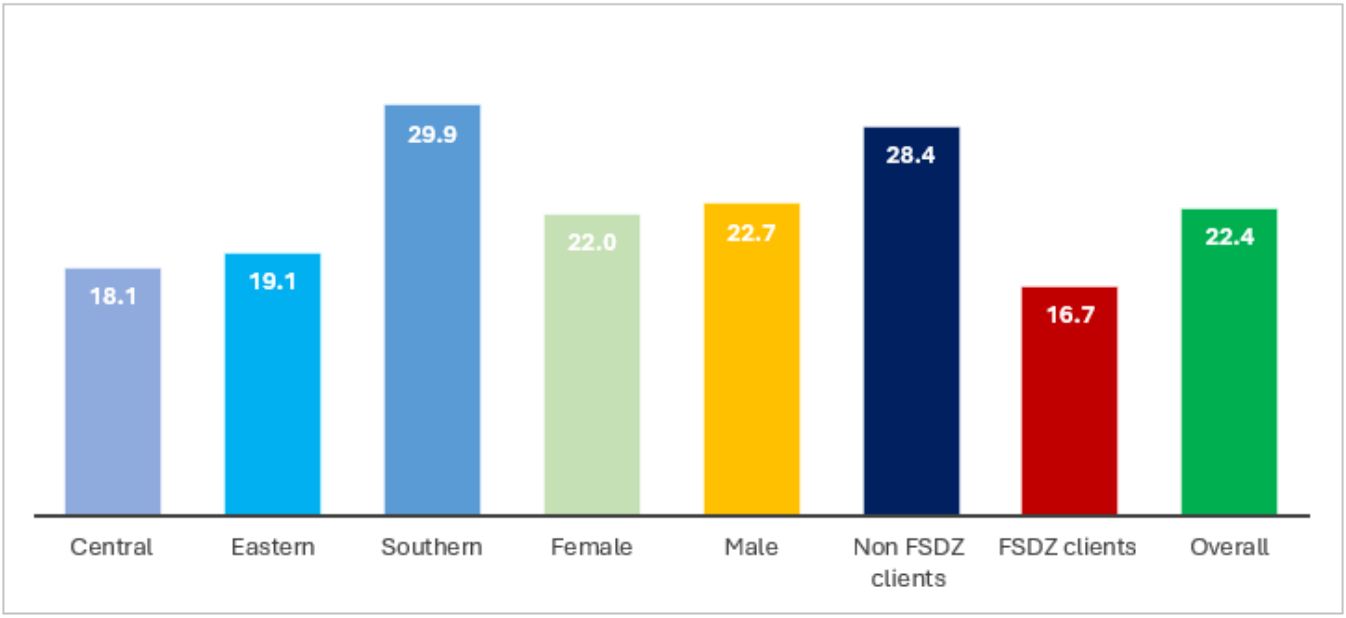
Table 2 shows overall financial health of SHFs including the results at dimension level.

Table 2: Financial health results by dimensions (%)

Financially healthy adults	22.4
Ability to manage day to day	67.1
Manage: Adjust expenses according to the money available	91.1
Manage: Spend much less or a bit less than income	38.2
Manage: Do not have to sell assets or borrow to repay loan	36.3
Manage: Did not go without food to eat at any point in the last 6 months	36.4
Ability to cope with risk	42.5
Risk: Saved to cope with unexpected expenses	50.7
Risk: Able to raise money in 3 days in case of emergency	35.7
Risk: Did not go without medicine or medical treatment at any point in the last 6 months	25.0
Risk: Do not struggle to pay for unexpected expenses	24.7
Ability to invest in the future	33.5
Invest: Regularly set aside money for specific purpose in the future	40.9
Invest: Uses savings or credit to invest in assets, education	51.0

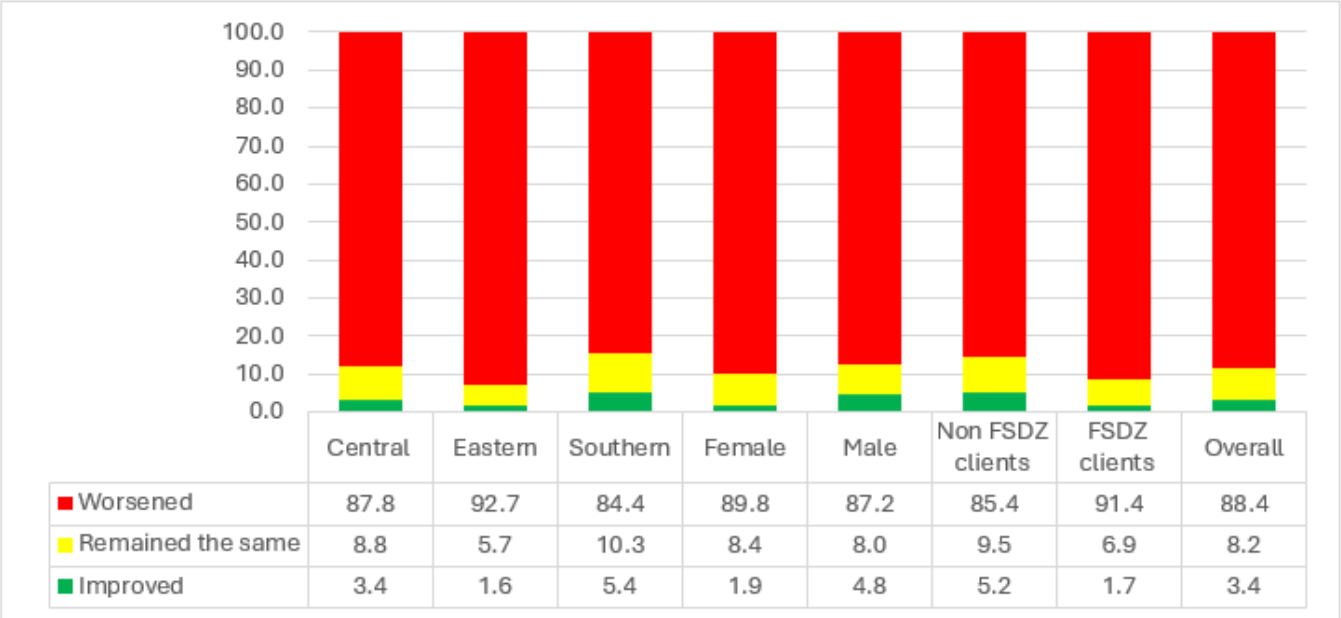
The proportion of financially healthy individuals, according to the study results, was 22 percent, somewhat above the financial health levels of the Zambian adult population recorded in the 2020 FinScope survey. Smallholder farmers from the Southern province (30%) exhibited superior financial health compared to their counterparts from the Central (18%) and Eastern (19%) provinces. Moreover, it was disclosed that non-FSD Zambian smallholder farmers exhibit superior financial health relative to those sponsored by FSD Zambia. This also affirms that the targeting approach employed by FSD Zambia includes the most vulnerable elements of society as part of its clientele base. Consistent with the national 2020 FinScope survey, males have a greater propensity for financial wellness compared to their female counterparts. See **Figure 9.**

Figure 9: Financially healthy adults (%)



Alongside enquiries regarding financial health, SHFs were requested to evaluate their financial status in relation to the previous twelve months. Figure 10 illustrates that over 88 percent of SHFs reported a deterioration in their financial situation. This outcome aligns with the financial health status where there are few SHFs who are financially healthy. The survey results indicated that there were more female SHFs than male smallholder farmers whose self-assessed financial condition had deteriorated during the past twelve months.

Figure 10: Self rated financial status (%)



	Central	Eastern	Southern	Female	Male	Non FSDZ clients	FSDZ clients	Overall
Worsened	87.8	92.7	84.4	89.8	87.2	85.4	91.4	88.4
Remained the same	8.8	5.7	10.3	8.4	8.0	9.5	6.9	8.2
Improved	3.4	1.6	5.4	1.9	4.8	5.2	1.7	3.4

4.5. Farming characteristics

This survey concentrated on essential farming attributes, including primary farming activity, crop type, livestock type, average farm size, and years of farming experience. All surveyed smallholder farmers were cultivating crops as their major agricultural activity, while at least 50 percent were keeping livestock **(Figure 11)**.

Figure 11: Primary farming activity (%)

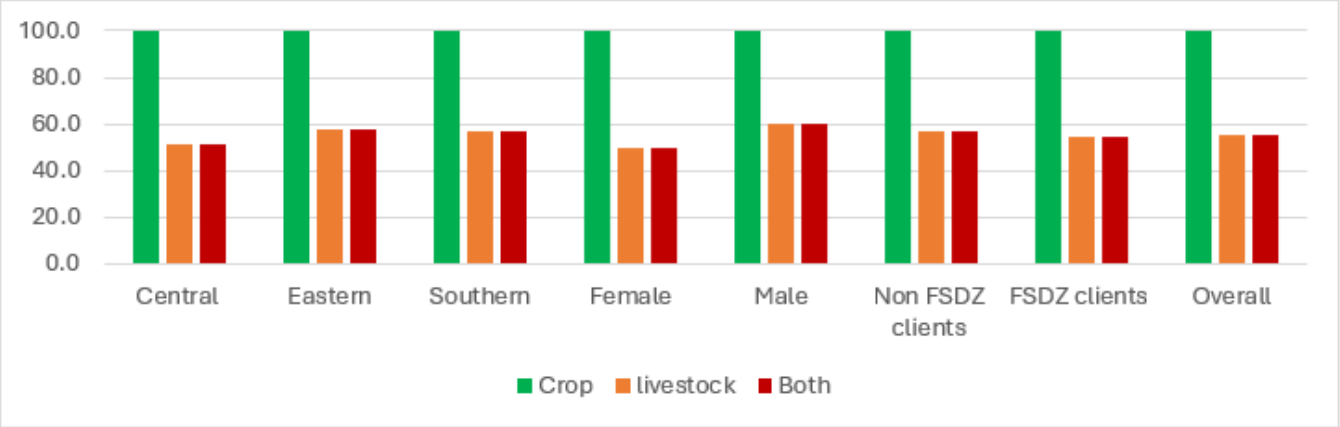
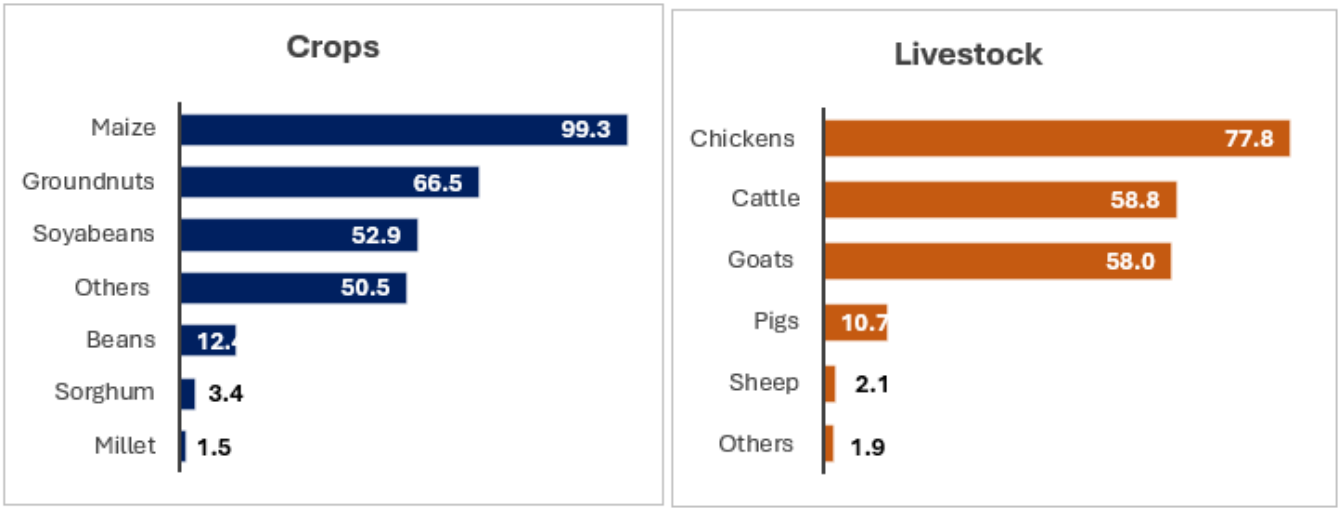


Figure 12 show that the predominant crops cultivated by smallholder farmers (SHFs) were maize, groundnuts, soybeans and others (Beans, Cassava, sunflower & horticulture), while the most raised livestock comprises chickens, calves, and goats.

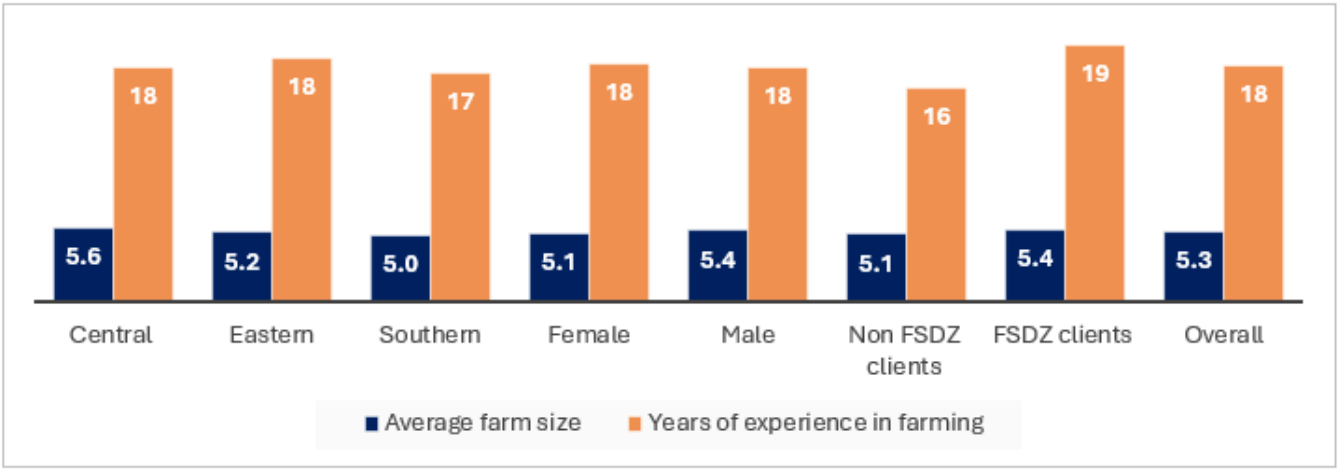
Figure 12: Types of crops and Livestock (%)



Furthermore, as illustrated in **Figure 13**, the survey results indicated that most smallholder farmers possessed farming experience, with an average tenure of 18 years. This distribution remained similar

across provincial levels, gender of the farmer, and type of client. The average farm size possessed by the smallholder farmers (SHFs) was 5 hectares, indicating that they were primarily subsistence and transitional farmers, predominantly farming staple foods and cash crops.

Figure 13: Average farm size and years' experience in farming



5. Effects of the drought on smallholder farmers

Droughts present a considerable risk to smallholder farmers, who typically depend on rainfed agriculture and possess insufficient means to manage extended periods of aridity. Drought can have catastrophic impacts, adversely affecting livelihoods, food security, and overall well-being. This study examined the effects of drought on smallholder farmers, specifically assessing the impact on farmers, the extent of this impact, and various consequences such as food security, food scarcity, crop loss, reduction in household income, utilisation of formal and informal financial services, and population migration, among others **(Table 3)**.

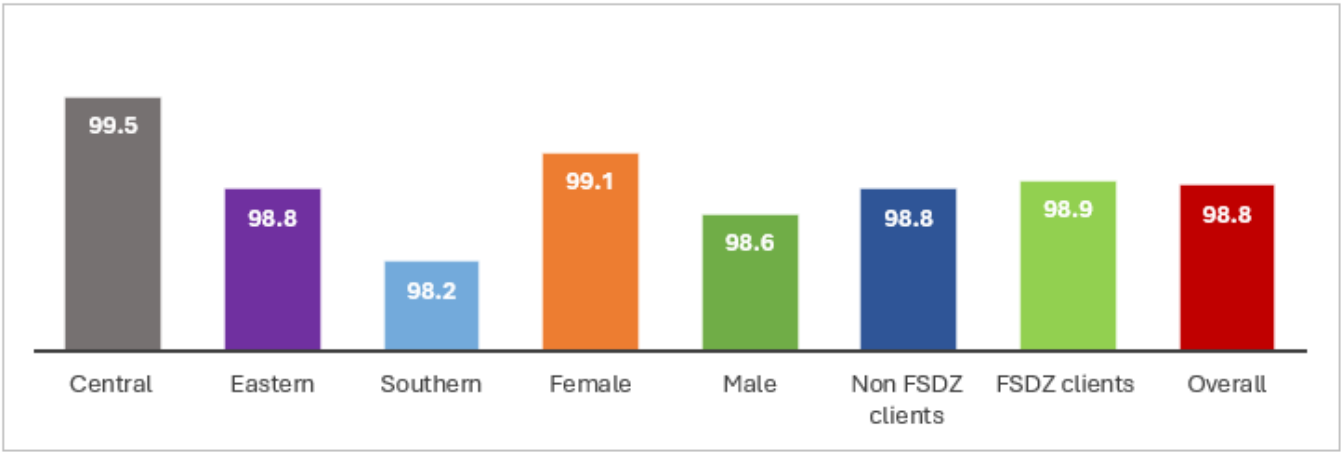
Table 3: Classifications of anticipated impacts/effects of the drought on farmers - Study focus

Threatened household food security
Caused food scarcity
Caused no choice in food preferences
Caused malnutrition
Affected human health
Caused loss of livestock
Caused loss of crop
Caused unemployment
Caused reduction in household income
Caused me to shift from my current location (population migration)
Affected schooling for my children
Caused failure to pay for other basic services (health, sanitation etc)
Affected use of formal financial services (banking, mobile money etc)
Affected use of informal financial services (savings group, village bank, chilimba etc)

Figure 14 illustrates that nearly all the SHFs, irrespective of province, gender, or support from FSD Zambia, reported being impacted by the drought encountered in Zambia during the 2023/4 farming season. Consequently, the effects of the drought were not confined to any agricultural sector or category.

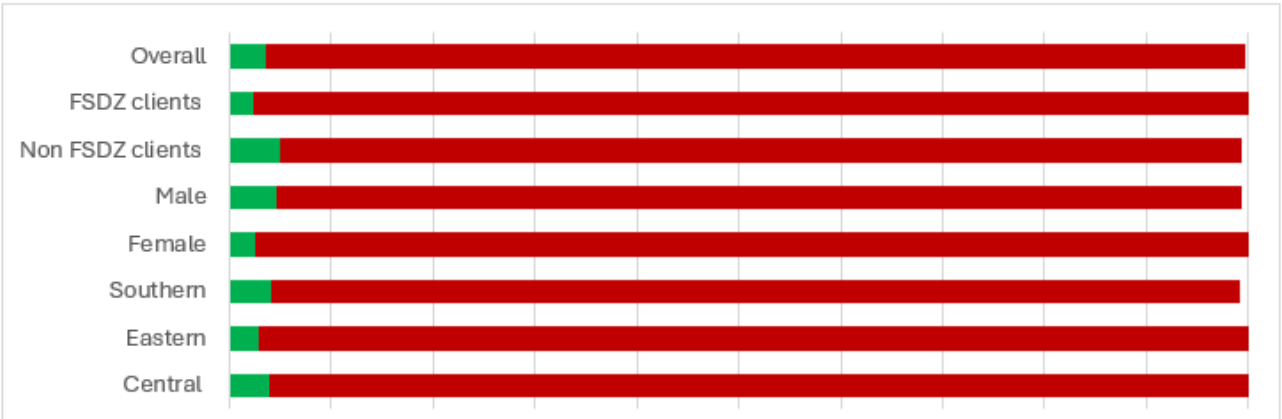
At the provincial level, all SHFs in Central Province reported being affected, while 99 percent in Eastern Province and 98 percent in Southern Province indicated the same. The consequences of the drought exhibited minimal to no differentiation based on sex and customer type.

Figure 14: Whether affected by the drought (%)



In terms of the extent of the effect **(Figure 15)**, 96 percent of the SHFs stated that they were severely affected. In terms of the comparison of the extent of the effect, FSD Zambia supported clients were more severely affected (98%) than the non FSD Zambia clients (95%). The survey results also showed that there was a higher likelihood of female (98%) SHFs being severely impacted by the drought than their male counterparts (95%).

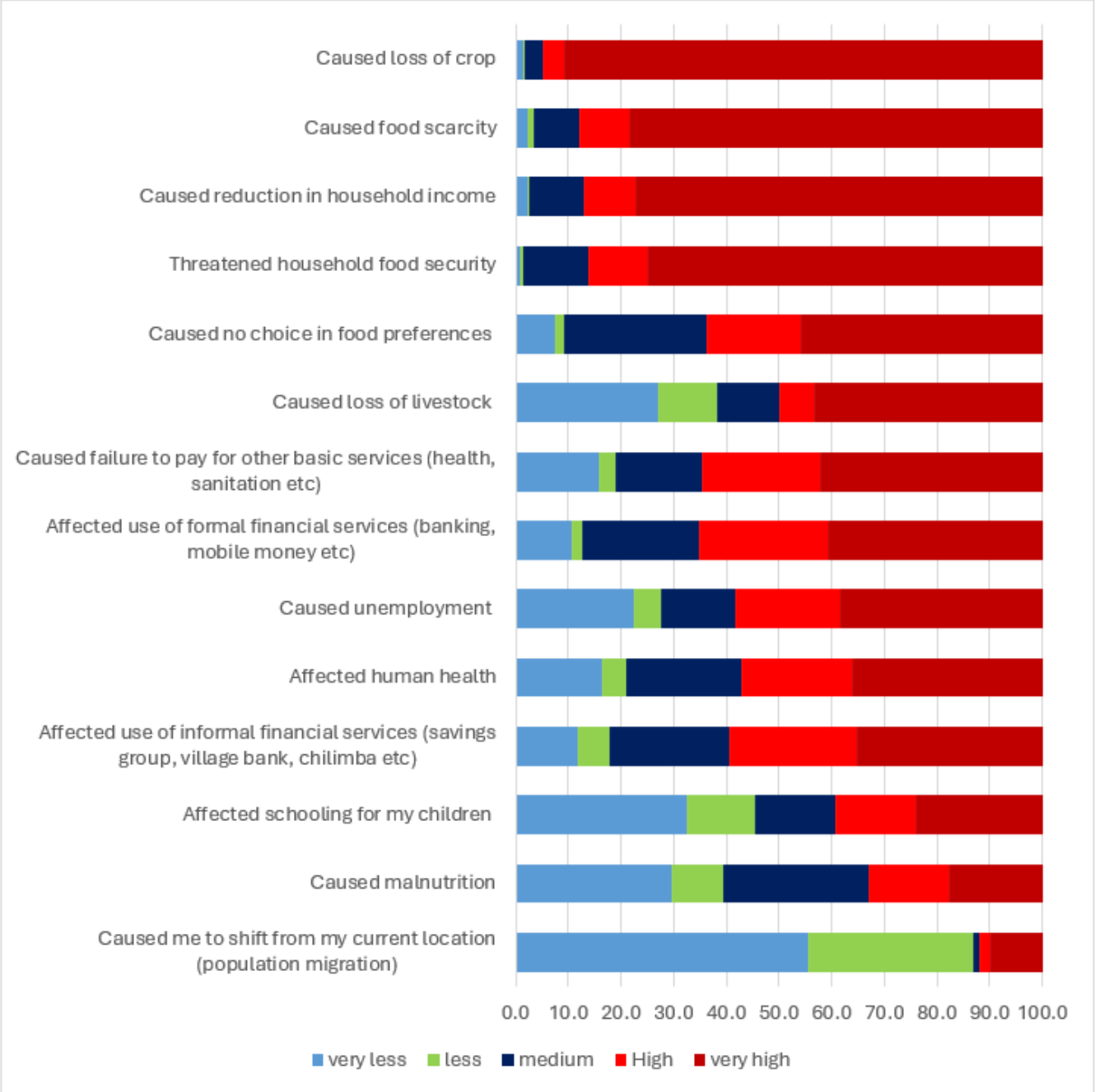
Figure 15: Extent of the effect of the drought (%)



	Central	Eastern	Southern	Female	Male	Non FSDZ clients	FSDZ clients	Overall
Moderately affected	3.9	2.9	4.0	2.5	4.6	4.9	2.3	3.6
Severely affected	96.1	97.2	95.1	97.5	94.9	94.5	97.7	96.2

The principal specific effects of the drought included crop loss, food scarcity, diminished household income, and jeopardised food security, as seen in Figure 16. The effects of population movement and malnutrition were the least reported, mostly due to their classification as long-term consequences that manifest over an extended period. For more particular effects observed, see **Figure 16.**

Figure 16: Specific effect of the drought, Overall

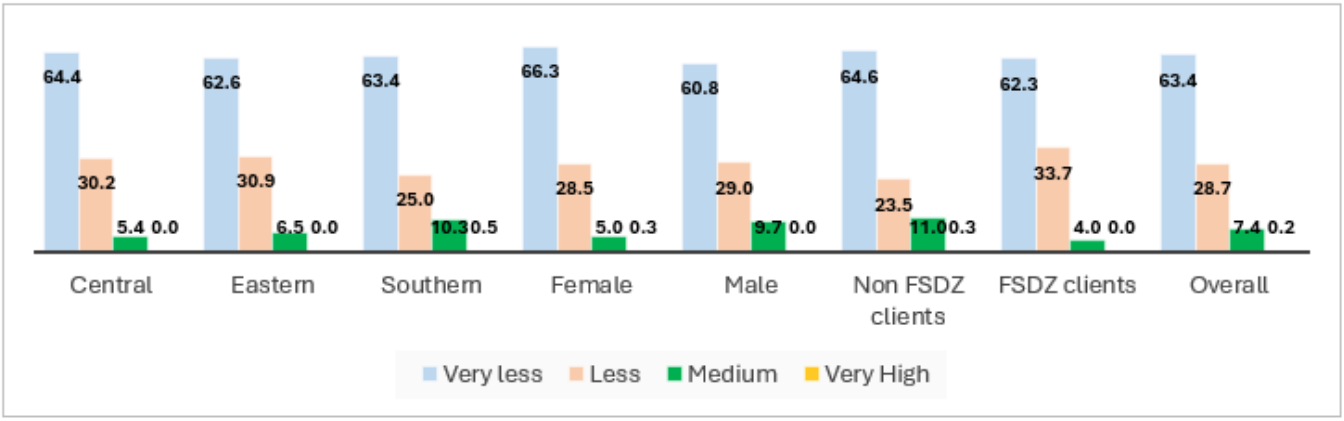


6. Coping strategies to deal with impact of the drought

To mitigate and adapt to the effects of drought, individuals and households, particularly smallholder farmers, can implement various strategies. Coping tactics may be categorised as proactive (before to the

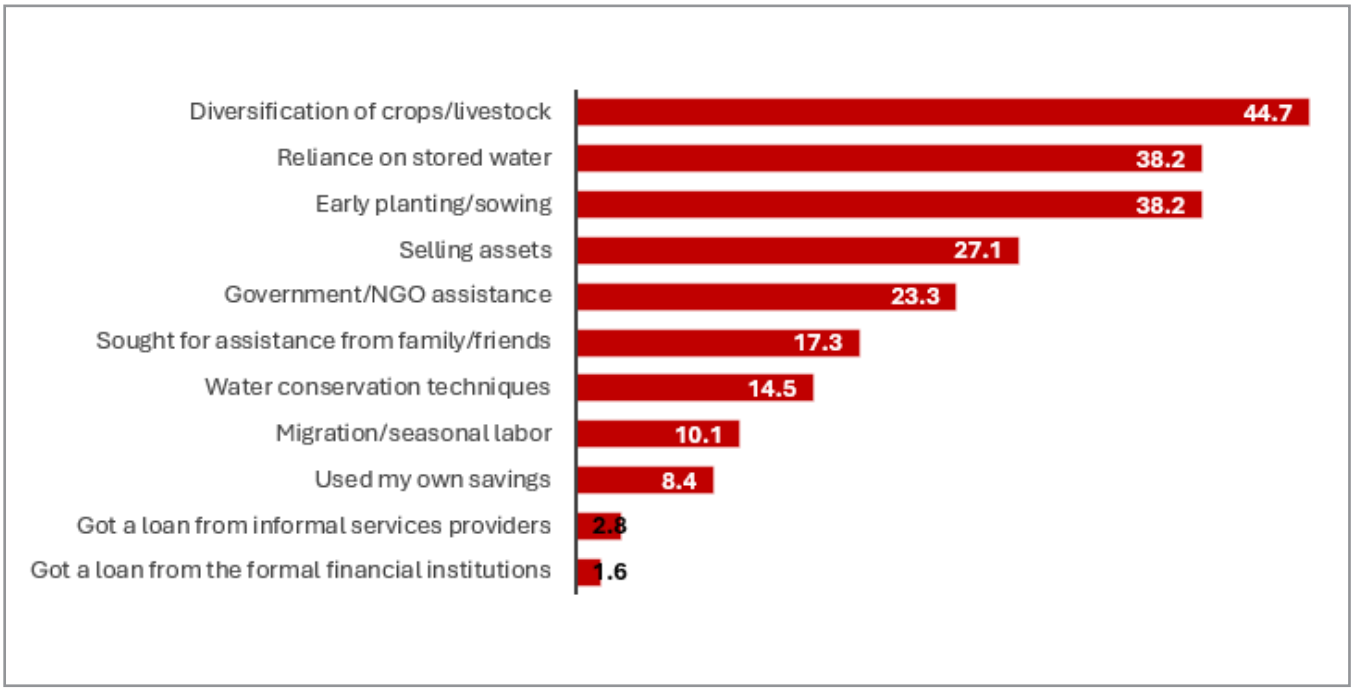
drought), reactive (during the drought), and long-term adaption measures. **Figure 17** illustrates that SHFs implemented no pre-emptive actions as their preparation to address the impacts of the drought was severely constrained. None of the SHFs surveyed said that their degree of preparedness for the drought was particularly high. Only 7 percent indicated that their degree of preparedness was medium. This observation regarding the limited proactive measures to address the impacts of the drought was consistent at the provincial level, categorised by sex and client type.

Figure 17: Level of preparedness to deal with the drought (%)



Some of the measure which SHFs had put in place to deal with the effects of the drought included diversification, reliance on stored water, early planting, selling assets and reliance of government/NGO support and friends/families. **Figure 18**.

Figure 18: Strategies used to cope with the drought, overall (%)



7. Insurance uptake

Insurance adoption can serve as an effective coping mechanism for individuals and communities with the repercussions of drought. Various types of insurance can be employed as a coping method, including:

Crop Insurance: This is designed to protect farmers from losses in yield or revenue caused by drought. Traditional crop insurance often relies on assessments of individual farms, which can be costly. Index-based insurance is a newer approach that triggers payouts based on a weather index (like rainfall), making it more affordable and scalable.

Livestock Insurance: This protects livestock owners from losses due to drought-related mortality or reduced output. It can assist pastoralists and smallholder farmers retain their livelihoods when drought strikes.

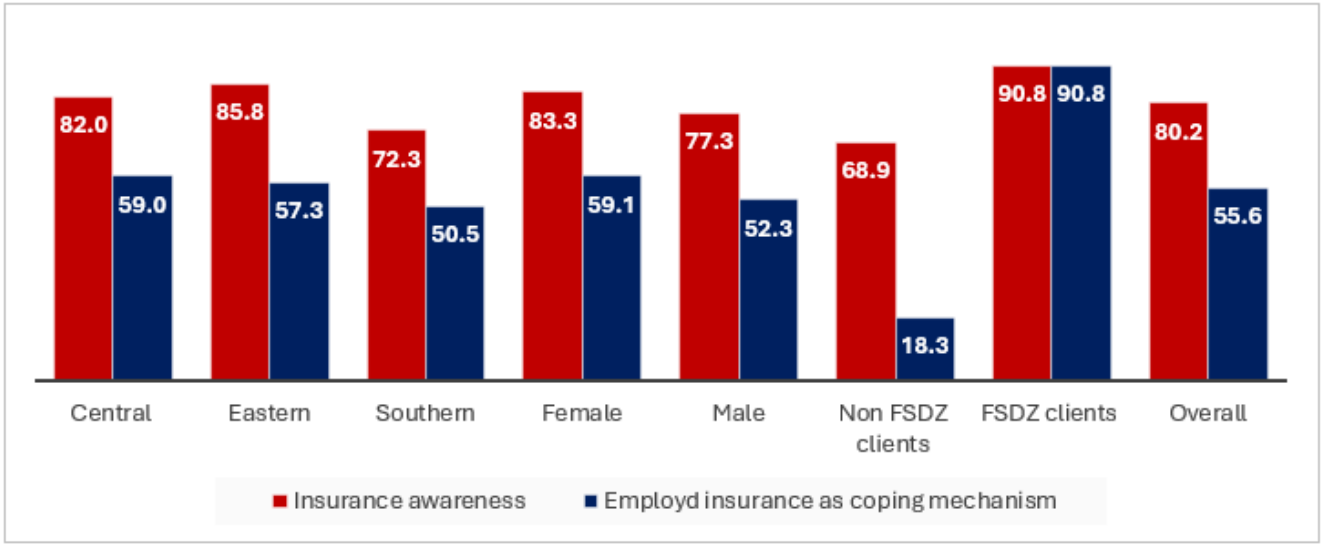
Climate risk insurance: This insurance utilises a quantifiable index, such as precipitation or vegetation density, to ascertain disbursements. It is less vulnerable to moral hazard and adverse selection, rendering it more appropriate for drought-prone areas. This type of insurance is also called Index -based insurance.

This report examines the adoption of insurance by smallholder farmers as a primary coping strategy, specifically investigating insurance awareness, types of insurance utilised, claims and payouts, satisfaction levels, and future purchasing intentions.

7.1. Awareness and uptake of insurance as a coping strategy

Figure 19 illustrates that insurance awareness was prevalent among the surveyed smallholder farmers, with 80 percent indicating their knowledge of insurance as a coping mechanism. Awareness levels were significantly higher among FSD Zambia customers (91%) compared to non-clients getting no interventions from FSD Zambia (69%). Furthermore, female SHFs generally exhibited a greater level of awareness

Figure 19: Insurance awareness and uptake as a coping strategy (%)

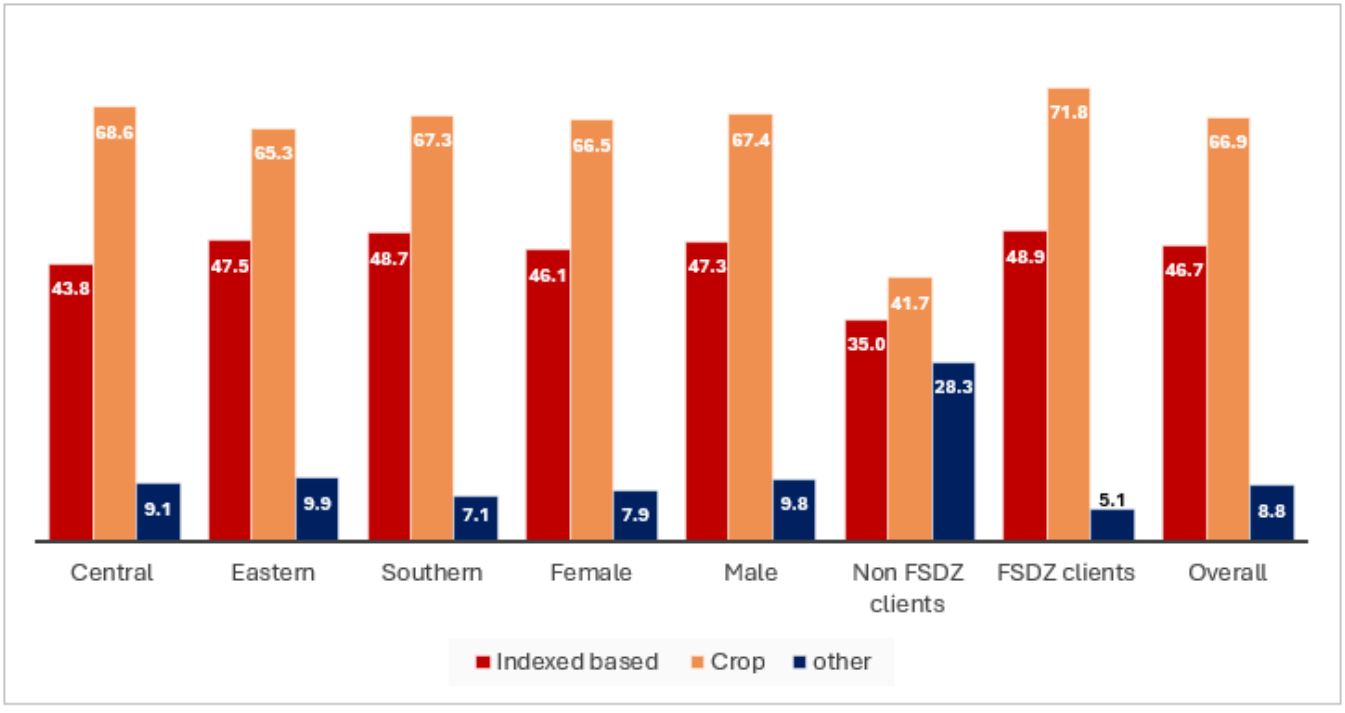


particularly among non-FSD Zambia clients, where only 18 percent reported utilising insurance as a coping strategy. The adoption of insurance was notably high (91%) among FSD Zambia clients, as all smallholder farmers with awareness were utilising insurance as a financial service to mitigate their risk. At the provincial level, insurance adoption among smallholder farmers (SHFs) was recorded at 59% in Central, 57% in Eastern, and 51% in Southern, the latter exhibiting the lowest uptake among the three provinces. Moreover, akin to awareness, insurance adoption seemed to be elevated among female smallholder farmers.

7.2. Type of insurance employed

Among the subset of farmers who reported utilising insurance, crop insurance was the most prevalent at 67%, followed by index-based insurance at 47%, while only 9% engaged in other insurance types such as motor vehicle and medical insurance. Notably, the adoption of alternative insurance types was significantly higher among Non FSD Zambia clients at 28%. Despite the widespread promotion of climate risk insurance (index-based) as the optimal solution for addressing climate change impacts, crop insurance remained considerably more common, as illustrated in **Figure 20**, with consistent rankings across provincial levels, gender, and client categories.

Figure 20: Type of insurance used (%)



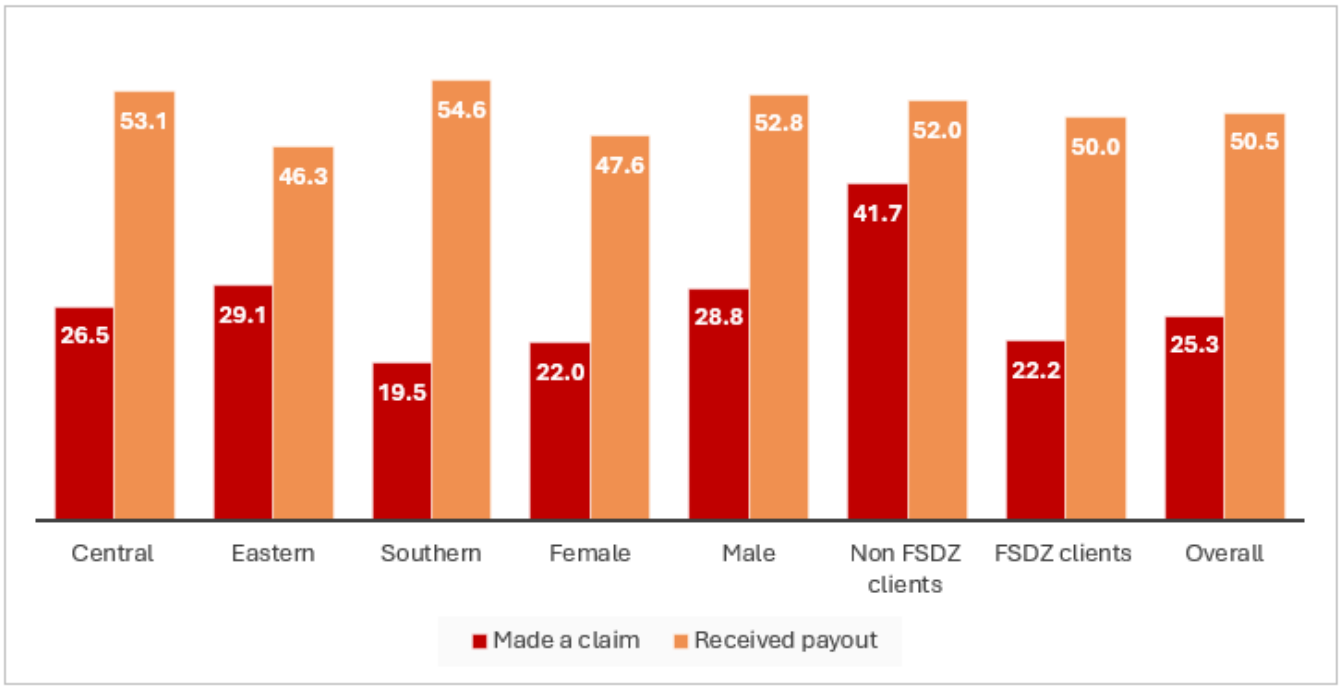
7.3. Insurance claims and payouts

The claim management system for crop and index insurance differs from traditional crop insurance. In traditional insurance, an assessor visits the farm to evaluate losses, while index-based insurance relies on a

pre-defined index, such as rainfall or vegetation levels. In index-based insurance, if the index falls below a certain threshold (the 'trigger'), indicating drought conditions, a payout is automatically triggered.

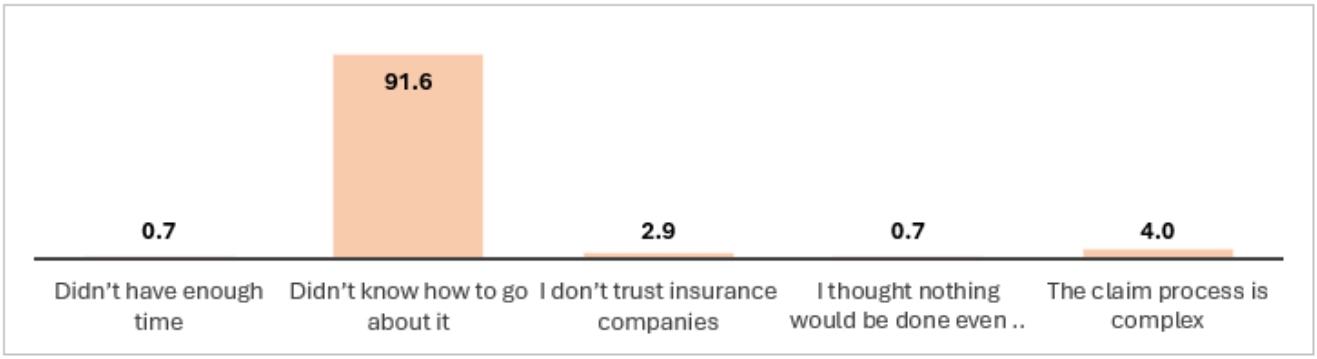
This survey, as illustrated in **Figure 21**, revealed a discrepancy between the percentage of farmers who reported filing an insurance claim and those who received a payout. For instance, among the 25 percent of SHFs who submitted insurance claims, merely 50 percent indicated that they received the payouts. This may be attributed to various causes, including insufficient awareness and comprehension of insurance claim administration, the type of insurance, and the insurance provider. If the study solely concentrated on climate risk insurance, it would be anticipated that all claims would result in payouts.

Figure 21: Made claims vs received payout (%)



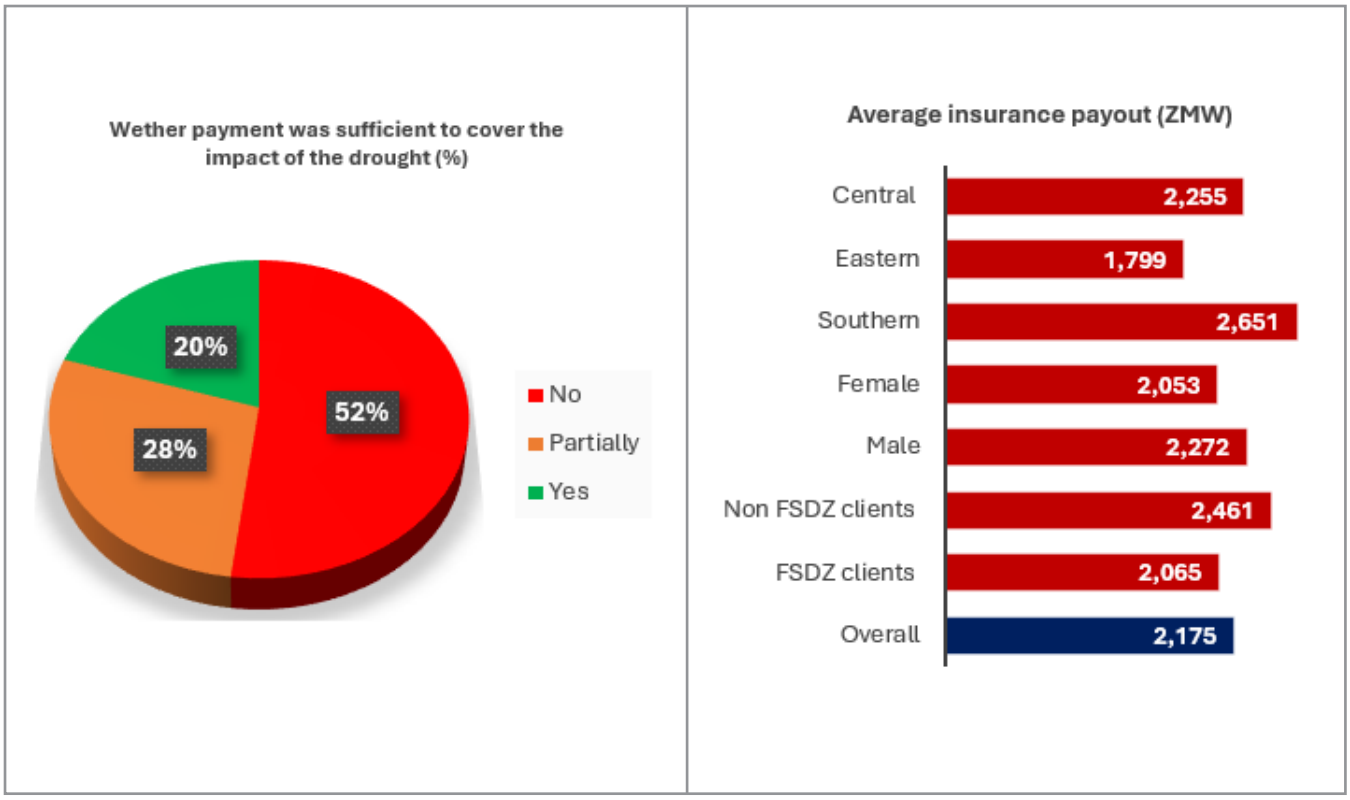
As a result of the drought during the 2023/4 season, it was anticipated that all smallholder farmers (SHFs) would submit claims; however, as illustrated in Figure 21, two-thirds of the SHFs did not file claims, primarily due to a lack of understanding (92%) regarding the claims process. A smaller proportion (4%) of farmers identified the complexity of the claims process as their primary reason. Refer to **Figure 22**.

Figure 22:Reasons for not making a claim (%)



Furthermore, as illustrated in **Figure 23**, the average claim received by the SHFs was approximately ZMW 2,100, with variations among regions; the Southern province exhibited a greater average compared to both Central and Eastern provinces. Just over fifty percent of the SHFs indicated that the amount of payout received was inadequate to address the impact, whilst only twenty percent asserted that the sum was sufficient.

Figure 23: Average claim received and whether sufficient to cover the loss

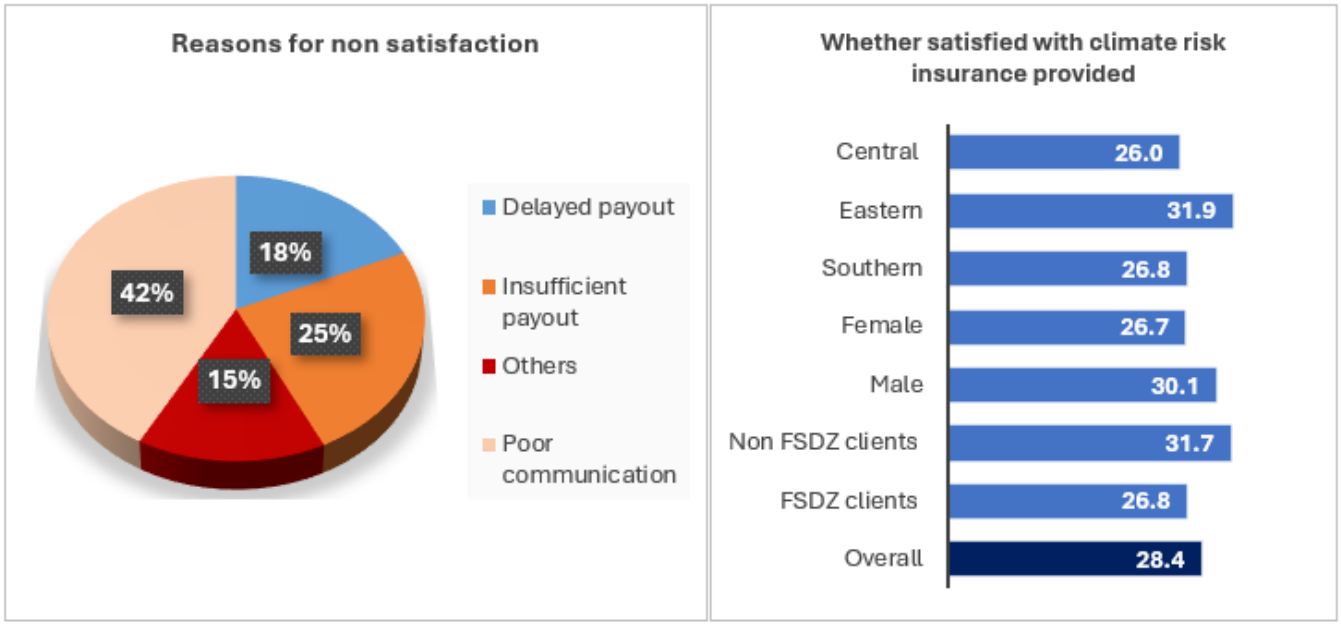


7.4. Level of satisfaction and intentions to purchase insurance

Enhancing satisfaction levels is essential for advocating insurance as a risk management approach amid climate shocks like droughts. The survey aimed to evaluate the satisfaction levels of farmers utilising climate risk insurance.

As illustrated in **Figure 24**, just over a quarter of smallholder farmers (SHFs) expressed satisfaction with climate risk insurance, primarily due to inadequate communication (42%) from the Government and insurance providers, as well as insufficient payouts (25%).

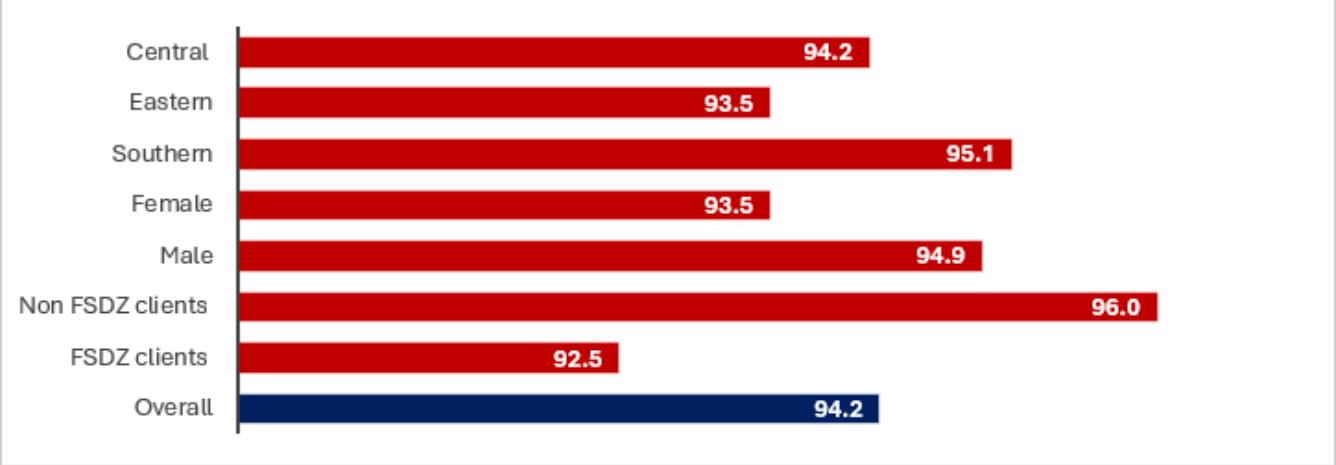
Figure 24: Levels of satisfaction for climate risk insurance and reasons for non-satisfaction (%)



Notwithstanding, the current levels of satisfaction on the use of climate risk insurance, there was still a higher willingness for uptake of climate risk among SHFs as reflected higher future purchase intent (94%). The future purchase intent question was not only posed to SHFs under insurance but also to those that are not currently using it as they also reflect potential market. Additional observations made from this survey based on **Figure 25** are;

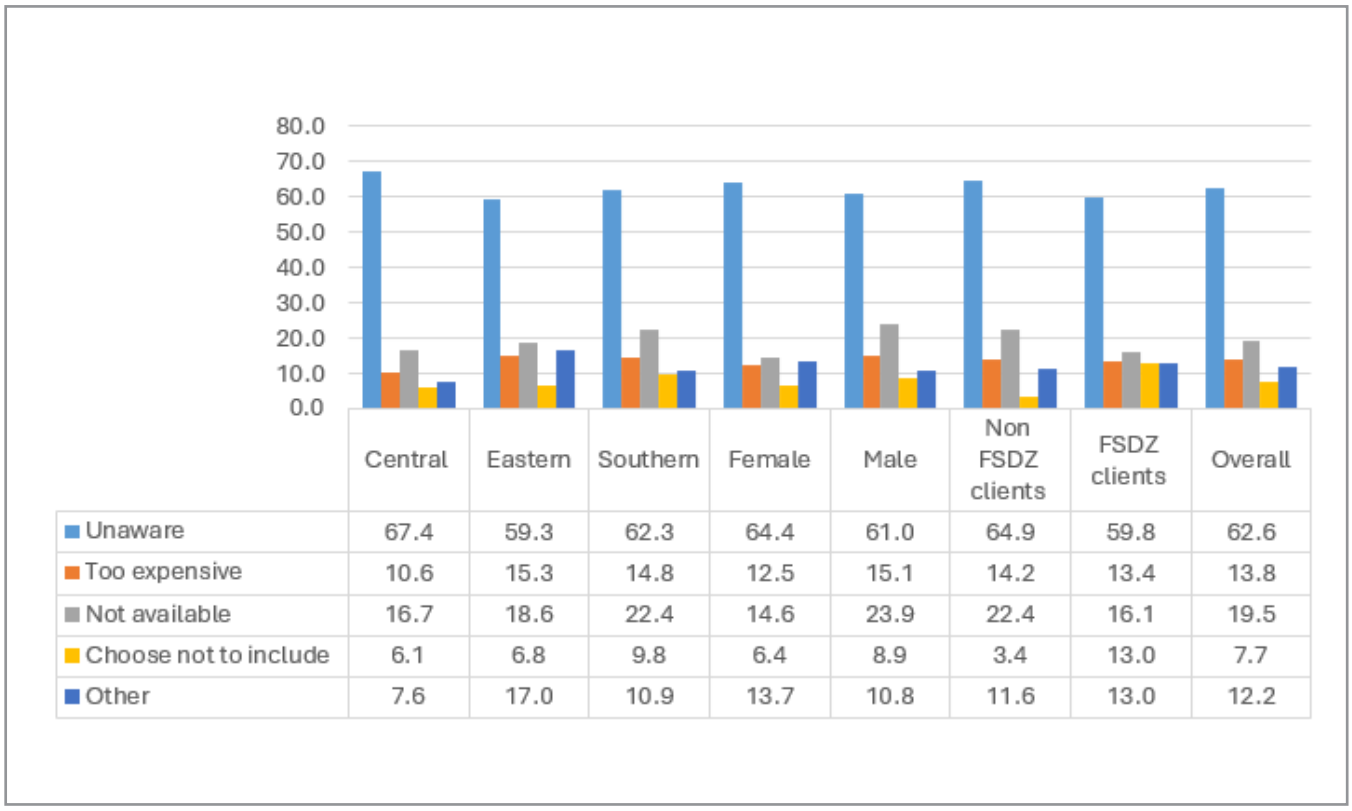
- The level of willingness to purchase climate risk insurance was higher for non-FSD Zambia clients (96% versus 93%).
- Willingness to purchase insurance was high in all the three provinces that were part of the survey (Southern 95%, Central and Eastern 94%).
- The willingness for future purchase of insurance was slightly higher among males (95%) compared to females (94%).

Figure 25: Intent to purchase climate risk insurance in future (%)



Furthermore, there were also additional exploration done on those SHFs who chose not to have climate risk insurance. **Figure 26** illustrates that the primary reason was a lack of awareness (62%) and the unavailability of the service. This indicated that enhancing knowledge and facilitating access to climate risk insurance would result in a higher uptake of insurance.

Figure 26: Reasons for those who chose not to have climate risk insurance (%)



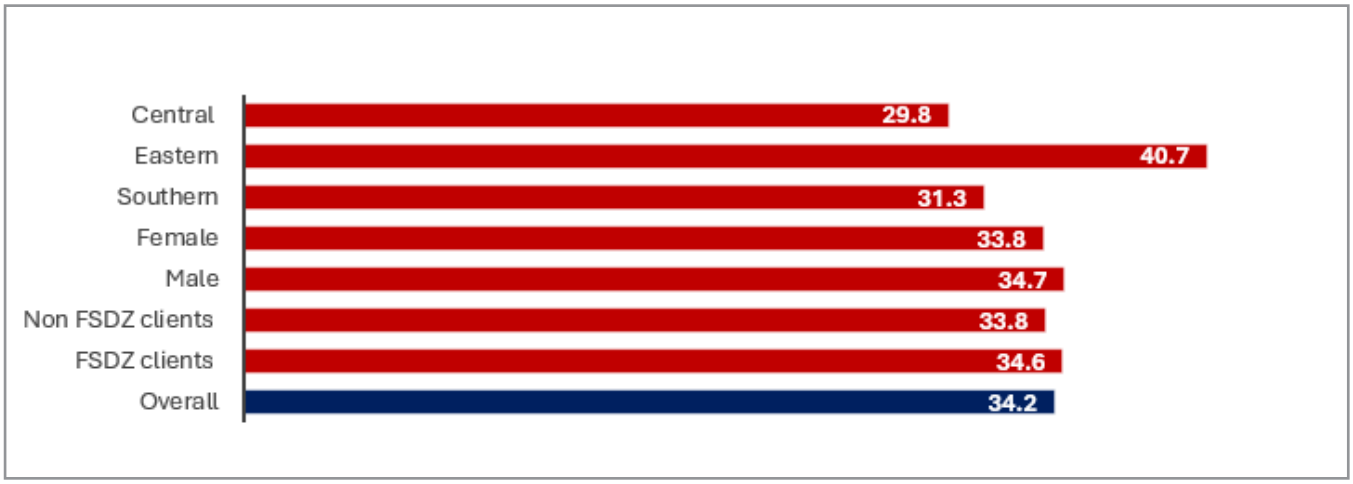
	Central	Eastern	Southern	Female	Male	Non FSDZ clients	FSDZ clients	Overall
Unaware	67.4	59.3	62.3	64.4	61.0	64.9	59.8	62.6
Too expensive	10.6	15.3	14.8	12.5	15.1	14.2	13.4	13.8
Not available	16.7	18.6	22.4	14.6	23.9	22.4	16.1	19.5
Choose not to include	6.1	6.8	9.8	6.4	8.9	3.4	13.0	7.7
Other	7.6	17.0	10.9	13.7	10.8	11.6	13.0	12.2

8. Support given to farmers in the face of the drought

The 2023/24 drought in Zambia was severe, affecting millions and resulting in extensive crop loss and other effects as outlined in section 5. Fortunately, there was considerable assistance from the government, foreign organisations, and NGOs to aid farmers during this challenging period. In the survey, we concentrated on three essential questions to evaluate whether farmers received support, the nature of the support received, and their satisfaction with that support.

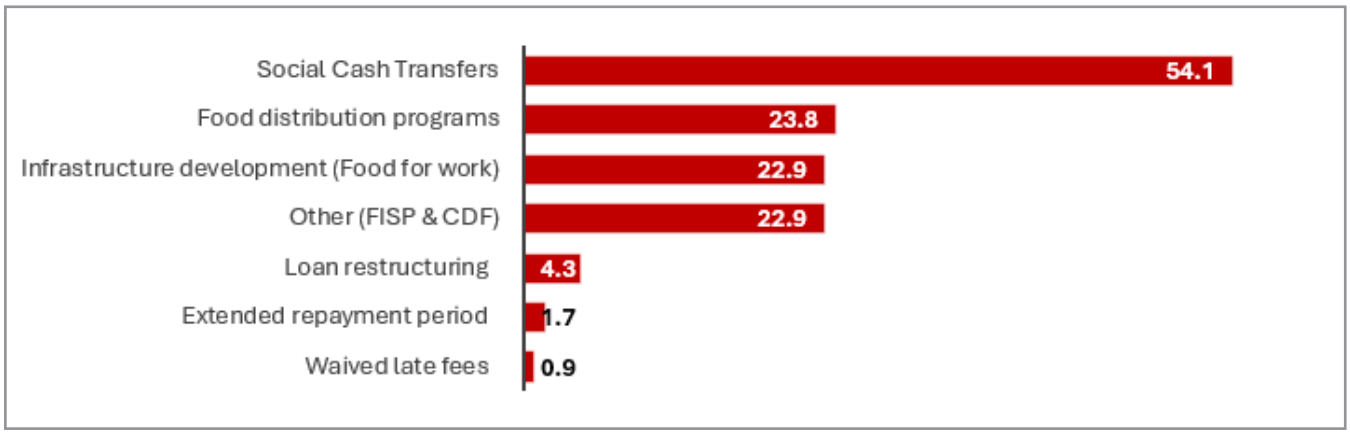
As can be seen from **Figure 27**, only 34 percent of SHFs stated that they had received support to help them deal with the impact of the drought.

Figure 27: Whether support was received to deal with the impact of the drought (%)



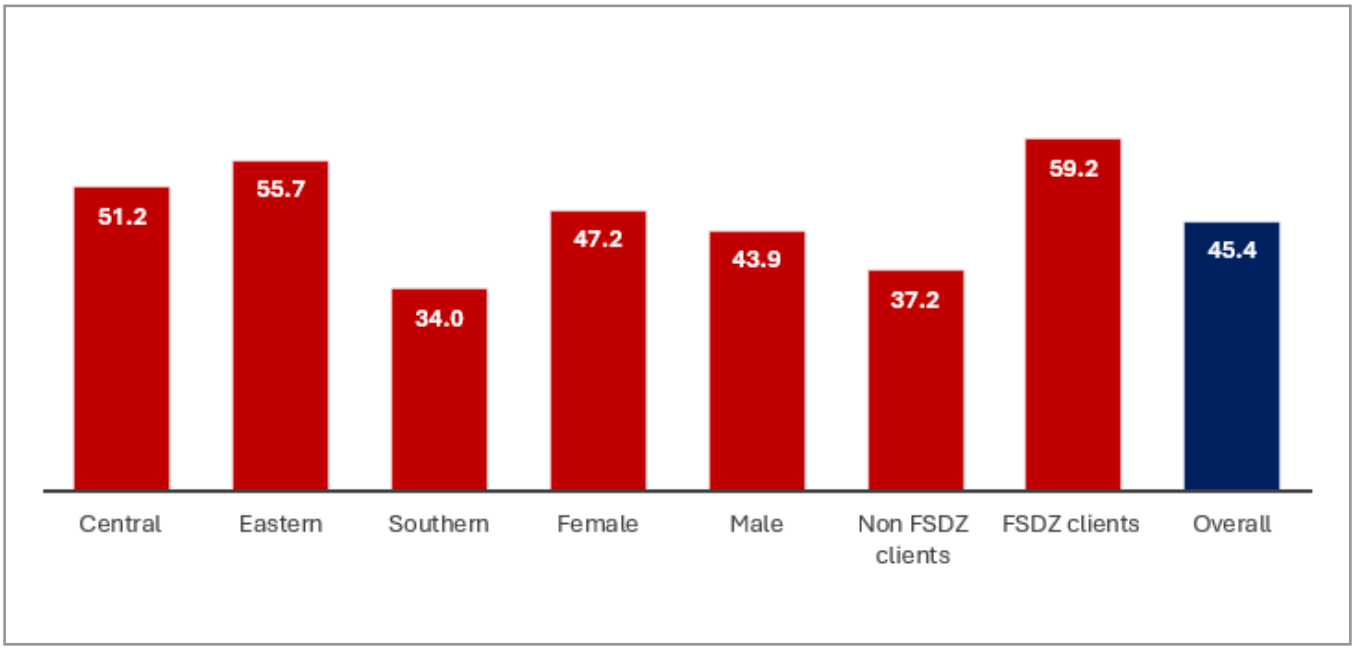
Farmers from the Eastern Province garnered greater support (41%) compared to those from other provinces. Farmers from the Central province received the minimal level of help (30%). The predominant forms of assistance provided encompass social cash transfers, food distribution, government initiatives like food for work, and additional subsidies such as the Farmer Input Support Program (FISP). Farmers were also anticipated to receive support on financial services, including loan terms. **Figure 28** shows that a minimal number of farmers reported receiving assistance with debt restructuring (4%) and prolonged loan repayments (2%).

Figure 28: Type of support received (%)



An assessment was conducted to evaluate the satisfaction regarding the support received. The survey results indicated that, overall, just under half of the farmers who received assistance were satisfied. Satisfaction levels varied significantly by province, with Southern Province exhibiting the lowest satisfaction rate (34%), while more than half of the farmers in Central and Eastern Provinces reported satisfaction. Additionally, clients supported by FSD Zambia demonstrated higher satisfaction levels compared to those who did not receive any FSD Zambia interventions (59% versus 37%). Refer to **Figure 29.**

Figure 29: Whether satisfied with level of support received (%)



9. Conclusion and recommendations

9.1. Conclusion

The 2023/24 drought in Zambia highlighted the susceptibility of smallholder farmers to the effects of climate change. The drought, the most severe in over forty years, caused extensive crop failures, with maize production declining by 54% relative to the prior year. This significantly damaged livelihoods, with 96% of polled farmers indicating they were severely harmed by the drought. Food insecurity and economic distress were prevalent, with 72% of smallholder farmers categorised as living in poverty according to the Poverty Probability Index.

Although awareness of insurance was high (80%), actual adoption was somewhat low, especially among non-FSD Zambia clients (18%). This signifies a substantial disparity between information and action, possibly attributable to financial limitations, distrust in insurance providers, or insufficient comprehension of insurance goods. Among insured individuals, merely 25% submitted claims, and of those, only 50% obtained compensation. This underscores the urgent necessity for enhanced insurance literacy and streamlined claims procedures to guarantee that insurance functions effectively as a safeguard against climate-related disruptions.

Moreover, the report indicated that merely 34% of smallholder farmers obtained assistance to mitigate the effects of the drought. Recipient satisfaction with the support provided was similarly minimal, with fewer than fifty percent indicating contentment. This underscores the necessity for more efficient and focused support programs that sufficiently meet the requirements of at-risk farmers.

Some of the key findings of the study were as follows:

- Widespread Impact: Nearly all smallholder farmers surveyed reported being affected by the drought, with 96% experiencing severe impacts.
- Crop Losses and Food Insecurity: The drought led to substantial crop losses, particularly maize, the primary staple food. This resulted in food scarcity for many households and threatened food security for the entire nation.
- Reduced Income and Financial Hardship: The drought significantly reduced household incomes, forcing many farmers to sell assets and borrow money to cope with the crisis. This exacerbated existing poverty, with 72% of farmers classified as poor.
- Limited Preparedness: Most farmers had not taken proactive measures to prepare for the drought, highlighting the need for improved early warning systems and capacity building.
- Low Insurance Uptake: Despite awareness of insurance as a coping mechanism, only 18% of smallholder farmers had insurance, and among those who did, only half received payouts due to awareness and complexity of the claims process.
- Limited Government Support: While some government support was provided, it was often insufficient and inadequately targeted. Many farmers did not receive any support or were dissatisfied with the level of assistance they received.

- In light of these findings, advancing resilience among smallholder farmers necessitates a holistic strategy. This encompasses investment in climate-resilient agriculture, the promotion of drought-resistant crops, and the enhancement of water management practices. Enhancing access to financial services, especially insurance, and reinforcing social safety nets are essential. Equally significant is the empowerment of women farmers, who frequently encounter heightened difficulties in obtaining resources and managing climate-related disruptions. By tackling these challenges, Zambia may advance towards a more sustainable and resilient agricultural sector capable of enduring the effects of climate change and securing food security for future generations.

9.2. Recommendations

Considering the principal findings of this research, the subsequent recommendations are proposed. By adopting these recommendations, the country may establish a more robust agricultural sector capable of enduring the effects of climate change and guaranteeing food security for its population.

1. Strengthen Early Warning Systems: Improve early warning systems to provide timely information about drought conditions, allowing farmers to take proactive measures.
2. Promote Climate-Smart Agriculture: Invest in climate-smart agricultural practices, such as drought-resistant crops, water conservation techniques, and diversification, to enhance resilience to climate shocks.
3. Expand Access to Insurance: Increase access to and awareness of agricultural insurance, particularly index-based insurance, which can provide financial protection against drought losses. Simplify claims procedures and improve payouts to encourage greater uptake.
4. Strengthen Social Safety Nets: Enhance social safety nets, such as cash transfers and food aid programs, to provide targeted support to vulnerable households during drought and other crises.

5. Empower Women Farmers: Address the specific vulnerabilities of women farmers, who are often disproportionately affected by droughts. Provide them with access to training, resources, and financial support to increase their resilience.
6. Improve Coordination: Strengthen coordination among government agencies, NGOs, and international organizations to ensure a more efficient and effective response to droughts and other climate-related shocks.
7. Invest in Research and Development: Invest in research and development to develop drought-tolerant crop varieties, improve water management technologies, and explore innovative insurance products.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