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Poverty and wellbeing in Zambia: Pandemic update

Working paper

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Contents

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Acronyms and abbreviations

CDF	Constituency Development Fund
CEEC	Citizens Economic Empowerment Commission
GDP	gross domestic product
HFPS	High-frequency Phone Surveys
LCMS	Living Conditions Measurement Survey
NFE	non-farm enterprise
SCT	Social Cash Transfer
SEIA	Socioeconomic Impact Assessment

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Summary

This study attempts to provide a descriptive assessment of the reasons behind the increase in poverty witnessed in Zambia between 2015 and 2022. Although poverty in Zambia is more pronounced in rural than urban areas, the increase in poverty was much higher in urban areas. This increase may be at least partly explained by a confluence of factors, including load shedding, the Covid-19 pandemic, which considerably negatively affected businesses and employment, and the effect of rising prices, which also put pressure on households' purchasing power. There were also dramatic increases in certain provinces (Lusaka, Southern, and Copperbelt) in the share of household heads who were not working due to pandemic-induced business closures in 2020, which is likely to have put a strain on pathways out of poverty, given the positive relationship between non-farm enterprises and resilience before the pandemic.

Although the agricultural sector was not as badly affected by economic crises caused by Covid-19, there are signs of destitution among the poorest households, many of whom are employed in agriculture as farm owners and labourers. Moreover, although the sector may have been relatively cushioned from the economic crisis caused by Covid-19, high rates of poverty in rural areas where households depend on agriculture and increased climate vulnerability are a serious cause for concern.

The pandemic period also brought with it a widening of the gap in poverty by gender of household head, which further disadvantaged women-headed households; due to the reduction in the number of person-to-person interactions, lockdown measures resulted in severe disruptions in the informal sector, which has a large representation of women workers. There was also a notable decline in women's empowerment during the pandemic, marked by a reduction in joint decision-making, and perceived rise in violence against women and children in the community from the onset of the pandemic into early 2021. This perceived rise in violence and reduced involvement in decision-making was particularly pronounced in Lusaka and Central provinces, two highly urbanised provinces with high increases in poverty between 2015 and 2022. Finally, the intergenerational persistence of poverty may have been amplified during the pandemic due to the digital divide in education and higher dropout rates experienced by children in the poorest households.

In this context of crises and stressors, coping capacities have been severely eroded in Zambia. Food insecurity has increased among households in extreme poverty, and only a small share (2 per cent) of households reported receiving assistance in the form of free food, cash transfers for women, direct cash transfers, and other in-kind transfers during the pandemic according to phone surveys in 2020. There was also limited variation in social assistance received by self-reported poverty status during the first year of the pandemic, which might indicate a high degree of mistargeting.

Amid heightened precarity in these interconnected urban, gender, and child wellbeing dimensions, in particular, we draw policy implications with a view to reducing and ultimately eradicating poverty in Zambia. These include provision of support for the urban informal sector through social protection, enhancing the productivity of the urban informal sector through a review of legislation, and exploring the potential for informal sector actors to build cooperatives to easily access financing. To create enabling rural pathways out of poverty, support for youth cooperatives and promotion of non-farm enterprises among rural households are recommended. To strengthen women's empowerment and child wellbeing, there is a need to scale up the provision of bursaries in secondary and tertiary institutions that give preference to

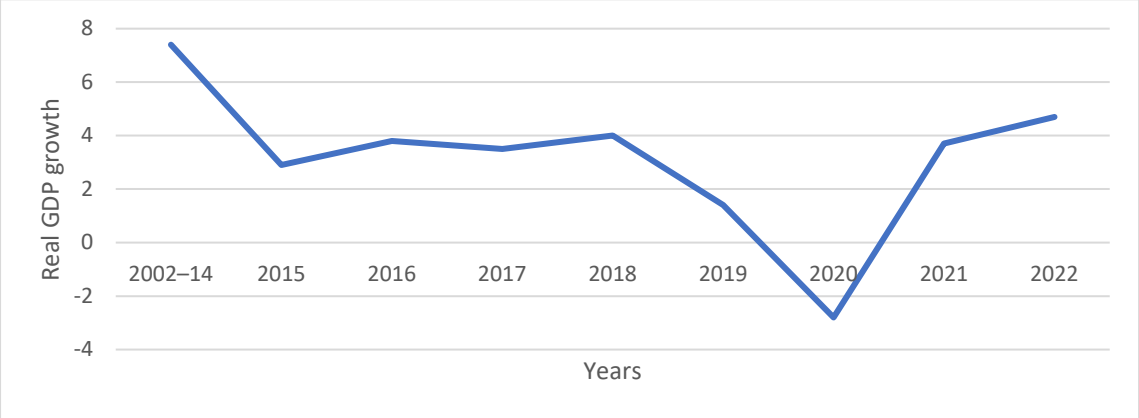
girls, and addressing violence against women arising from increasing poverty levels through increasing awareness about women’s rights.

1. Introduction

Zambia has experienced an increase in poverty, from 54.4 per cent in 2015 to 60.0 per cent in 2022 (Zamstats 2023). Although gross domestic product growth (GDP) was high between 2004 and 2014 – averaging 7.4 per cent annually on the back of debt relief under the Highly Indebted Poor Countries initiative, increased agriculture and mining, as well as rising copper prices – growth decelerated in the following years. Economic growth slowed to about 3–4 per cent between 2015 and 2018, and 1.4 per cent in 2019 (Ministry of Finance 2021). This slowdown was mainly attributed to a fall in copper prices (on which the country depends for about 70 per cent of its export earnings); a decline in agricultural output, especially during the drought years of 2016 and 2019; and the related challenge of hydroelectric power generation.

With the onset of Covid-19 and associated lockdown measures, Zambia's economy went into recession, contracting by 2.8 per cent in 2020. "The shrinking of the economy in 2020, rising burden of debt servicing, continuous depreciation of the currency, and rising inflation, which reached about 20 per cent by the end of 2020, has made the macro-economy weak" (UNCTAD 2021: 17). It has also eroded people's opportunities to forge pathways out of poverty through 'growth from below' (Shepherd *et al.* 2019), and amplified risk of impoverishment.

Figure 1.1: Trends in real GDP growth (2002–22)



Source: Annual economic reports for 2015 to 2022, Ministry of Finance

Although growth has picked up since 2021 (Figure 1.1), supported by "firmer copper prices, favourable external demand, good rainfall, and post-election confidence" (UNICEF Zambia 2023: 1), the increased poverty rate suggests that the great majority of the population is still living in considerable precarity. This paper attempts to identify changing conditions of insecurity since the onset of the pandemic in Zambia, and provides a descriptive update to the analysis of poverty in the 2010s presented in Diwakar and Bwalya (2021) and summarised in Box 1.1.

Box 1.1: Poverty dynamics and correlates in Zambia (2010–15)

Synthetic panel estimates using national poverty lines between 2010 and 2015 suggest that between 35 per cent and 47 per cent of the population were living in chronic poverty, when using national poverty lines. The share of chronic rural poverty was much higher (55–70 per cent) than in urban areas (8–16 per cent). Up to 25 per cent of the population experienced escapes from poverty or descents into poverty over the 2010–15 period. Provincial disaggregation indicates that Luapula, Northern, and Western provinces were most vulnerable to chronic poverty. Rates of chronic poverty were also higher than the country-wide average in Eastern and Muchinga provinces. Only Central, Northern, and Southern provinces fell within

the country-wide range of people living in chronic poverty or never poor, indicating the extent to which national averages can be misleading or fail to capture the variety of subnational differences over time.

Profiles associated with poverty status in 2010 and 2015 were distinct. These include employment in agriculture, household size and dependency share, residence in rural areas, older age of household head, and certain marital arrangements. Combinations of these, such as employment in agriculture without completion of primary education, or a high dependency share with employment in agriculture, amplified the likelihood of poverty. Households in poorer quintiles that experienced a decline in welfare over 2014–15 were more likely than households in other quintiles to believe that high prices of agriculture inputs were responsible for the decline, followed by drought. Poorer households were mostly unable to mitigate the negative effects of shocks; if they adopted coping strategies, these tended to be selling animals or doing piecework on farms. They were also more likely to forego meals or reduce their consumption of fish and meat.

Protective factors from poverty in 2010 and 2015, in contrast, included a household head with primary or secondary education or higher, presence of a non-farm enterprise, receipt of remittances, electricity, and a greater number of livestock. The interaction of a household head with secondary education or higher and a non-farm enterprise was also a protective factor. At the same time, there was a slight reduction in the protective force of secondary education or higher by 2015 compared to 2010, suggesting the education premium might have reduced. Moreover, ownership of an non-farm enterprise was a significant protective factor only in 2015. Ownership of a non-farm enterprise and completion of at least secondary education by the household head was an important combination in improving welfare in rural and urban areas, particularly for households in the second-richest quintile (per capita expenditures above the poverty line of 214 Zambian kwacha, ranging between 290 kwacha and 623 kwacha) in 2015.[1]

The remainder of this paper is structured as follows: section 2 describes the dataset and quantitative methods employed in the paper; section 3 presents the results of descriptive analysis of two household surveys in Zambia during Covid-19 in 2020 and 2021; section 4 presents regression-based analysis of correlates of poverty in 2022; And section 5 summarises the results and draws policy implications.

2. Data and methods

Examining wellbeing and welfare descriptively between 2020 and 2022

The datasets used in this analysis are summarised in Table 2.1. For this paper, we first descriptively analyse World Bank High-frequency Phone Surveys (HFPS) and the Zambia Statistics Agency's Socioeconomic Impact Assessment (SEIA). For the former, we consider aggregate averages and how people's wellbeing changed between the two survey rounds in mid-2020 and at the end of 2020. The SEIA allows us to extend the analysis to 2021 and further disaggregate by expenditure quintile. Finally, given the unavailability of Living Conditions Measurement Survey (LCMS) microdata at the time of writing, we instead rely on the government's LCMS survey findings report (Zamstats 2023), to consider how people's wellbeing had changed by 2022, especially when compared to the pre-pandemic period and the onset of the pandemic years.

[1] For 2022, the US$ equivalents are as follows: 214 Zambian kwacha (US$12.66), 290 kwacha (US$17.16), and 623 kwacha (US$36.86).

Table 2.1: Datasets analysed

Survey	Aims and focus of dataset	Coverage	Timing
High-frequency Phone Surveys	Rapid phone-based household monitoring surveys to help monitor and mitigate the social and economic impacts of the Covid-19 pandemic (Finn and Zadel 2020). These World Bank surveys collect data on topics including access to food staples, access to educational activities during school closures, employment dynamics, household incomes and livelihoods, income losses and coping strategies, and external assistance.	Around 1,600 households, representative of households with access to a mobile phone nationally and in Lusaka, urban areas excluding Lusaka, and rural areas	First round in June 2020, second round in December 2020, with each phase lasting 6–8 weeks
Socio economic Impact Assessment	To 'assess the socio-economic impact of Covid-19 on household welfare and provide partial data for rebasing of GDP'. The survey contains information on household demographics, wellbeing, access to health services, consumption expenditure, and welfare data (following the SWIFT model).[2]	29,715 households, representative at national, rural/urban and provincial levels	March–April 2021
Living Conditions Measurement Survey	To identify people in poverty, including where they live, and the distribution and severity of poverty as well as the degree of inequality. In doing so, it hopes to help monitor progress towards achievement of the Seventh National Development Plan and Sustainable Development Goal targets.	Representative at national, rural/urban, and provincial levels	2022

Identifying poverty determinants through linear and simultaneous quantile regressions

Following the same approach adopted in Diwakar and Bwalya (2021) for consistency, our second estimation approach aims to understand the correlates of welfare in the 2021 SEIA. We thus rely on ordinary least squares linear models regression of per capita expenditures on a set of correlates comparable to the earlier analysis in Diwakar and Bwalya (2021) and drawing on the wider literature on determinants of poverty and wellbeing, where:

$$y_i = \beta_0 + \beta_1 x_{i1} + \ldots \beta_k x_{ki} + u_i$$

where the dependent variable comprises per capita monthly expenditures of the household, β_0 is a constant, and the k independent variables comprise household controls and characteristics of the household head, and regional variables. We finally extend this model to analyse correlates of welfare across the income distribution using simultaneous quantile

[2] The Survey of Well-being via Instant and Frequent Tracking (SWIFT) is a means of rapidly assessing poverty at lower costs compared to typical large-scale household surveys.

regressions. As summarised in Diwakar and Bwalya (2021), quantile regression analysis (Koenker and Bassert 1978):

> can help us understand whether relationships of different 'predictors' of the outcome welfare measure are the same for people in the poorest quintile as for those in the second poorest quintile, and so forth. In other words, we can better understand relationships across the distribution of the per capita welfare outcome variable, as opposed to just the relationship centred around the mean.

Our quantile regressions involve bootstrapping. We run these two models using the full 2021 SEIA sample, and then on stratified subsets by gender, area of residence, and province.

There are limitations to this analysis, not least the absence of LCMS microdata, which prevents us from better understanding key correlates of poverty status in 2022 compared to pre-pandemic, especially using a multivariate framework.[3] Moreover, the SEIA allows us to analyse wellbeing across quintiles of the welfare distribution, though is based on a rapid means of estimating consumption and thus is not for the official poverty estimates of Zambia. It is for this reason that we do not examine poverty correlates directly, but rather rely on the underlying per capita expenditure measure alongside the quantile regressions. Finally, the HFPS does not allow us to understand monetary welfare in particular, as it does not contain information on household consumption. It does, though, contain information on self-reported income loss, subjective wellbeing, and food insecurity.

The reliance on the three datasets together allows for a degree of data triangulation. Moreover, each dataset contains variables that reflect people's broader wellbeing, including through assessing reported income loss, access to safety nets, and means of coping with shocks. Finally, the descriptive analysis of trends undertaken over the three years during and since Covid-19 offers important insights into changing wellbeing over the course of the pandemic.

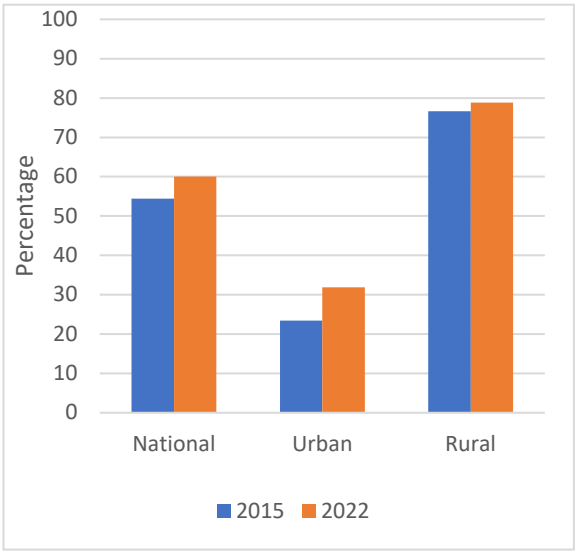
3. Understanding poverty in 2022 amid stagnant recovery

The incidence of poverty increased from 54.4 per cent in 2015 to 60.0 per cent in 2022 (Figure 3.1) (Zamstats 2023). The share of people in extreme poverty increased from 40.8 per cent in 2015 to 48.0 per cent in 2022, while the share of people in moderate poverty marginally reduced from 13.6 per cent in 2015 to 12.0 per cent in 2022,[4] presumably because many people became extremely poor. The share of people not in extreme or moderate poverty also reduced from 45.6 per cent in 2015 to 40 per cent in 2022. Furthermore, even though poverty in Zambia remains more pronounced in rural areas than urban areas, **the increase in poverty was much higher in urban areas (from 23.4 per cent in 2015 to 31.9 per cent in 2022) compared to rural areas (from 76.6 per cent in 2015 to 78.8 per cent in 2022).** By province, the increase in extreme poverty was particularly pronounced in Central, Lusaka, and Muchinga provinces. This section examines what might have contributed to the poverty trends observed going into 2022.

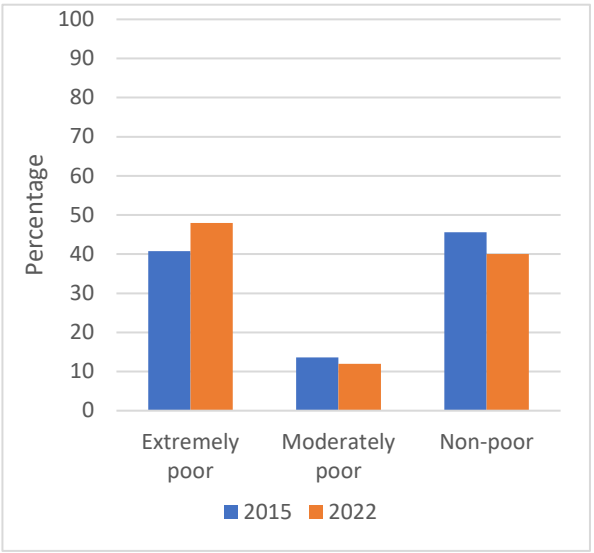
[3] Once this data has been obtained, the analysis will be updated.
[4] For 2022, the extreme poverty line was estimated at 336.73 Zambian kwacha (US$19.90), while the moderate poverty line was estimated at 516.73 kwacha (US$16.90) (exchange rate US$1:16.9 kwacha).

Figure 3.1: Poverty trends (2010–22)

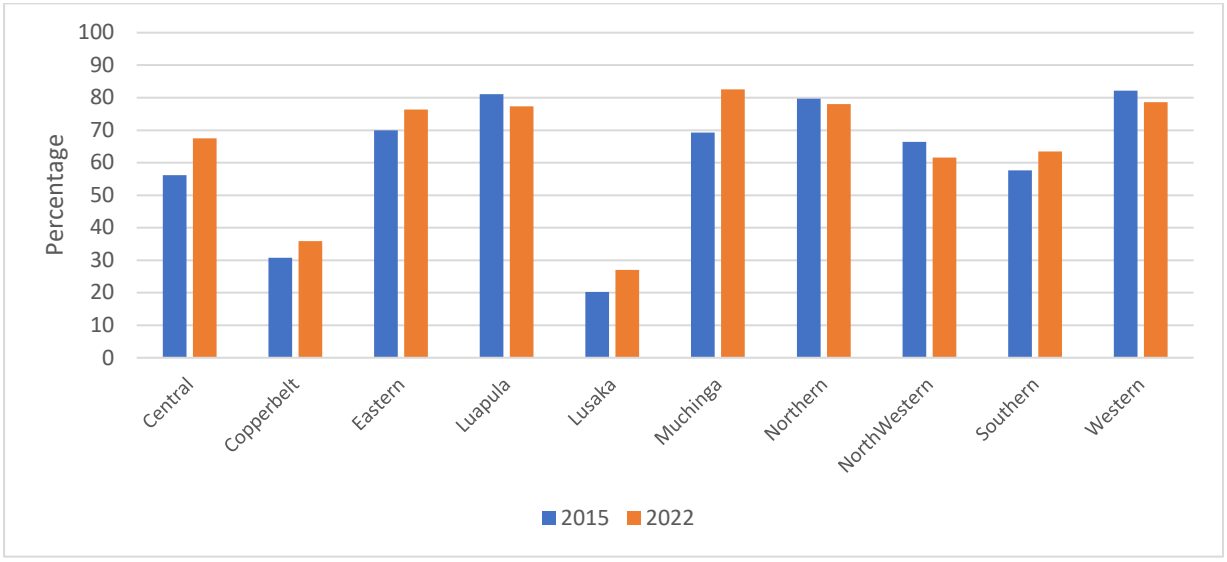
a. Incidence of poverty by residence



b. Incidence of extreme and moderate poverty



c. Incidence of poverty by province



Source: Zamstats (2023).

3.1 Drivers of rapidly rising poverty

Key messages

- Job loss and income reductions were observed across the welfare distribution by 2021. However, the poorest households were more likely to experience changes at the extremes – for example, either a complete loss of income or income increases (possibly attributed to agricultural income rebounding after the difficult 2019 drought year), compared to the richest households.
- There were dramatic increases in the incidence of poverty in certain provinces (Lusaka, Southern, and Copperbelt) in the share of household heads that were not working due to pandemic-induced business closures over 2020 (especially in urban areas) compared to

just before the pandemic. This represents a departure from the positive relationship observed between non-farm enterprises and household resilience before the pandemic.

- The agricultural sector was not as badly affected by the economic crises caused by the policy responses to Covid-19. However, there are signs of destitution among the poorest households, many of which are employed in agriculture. Continued high rates of poverty in rural areas are a serious cause for concern.

Livelihoods and income loss

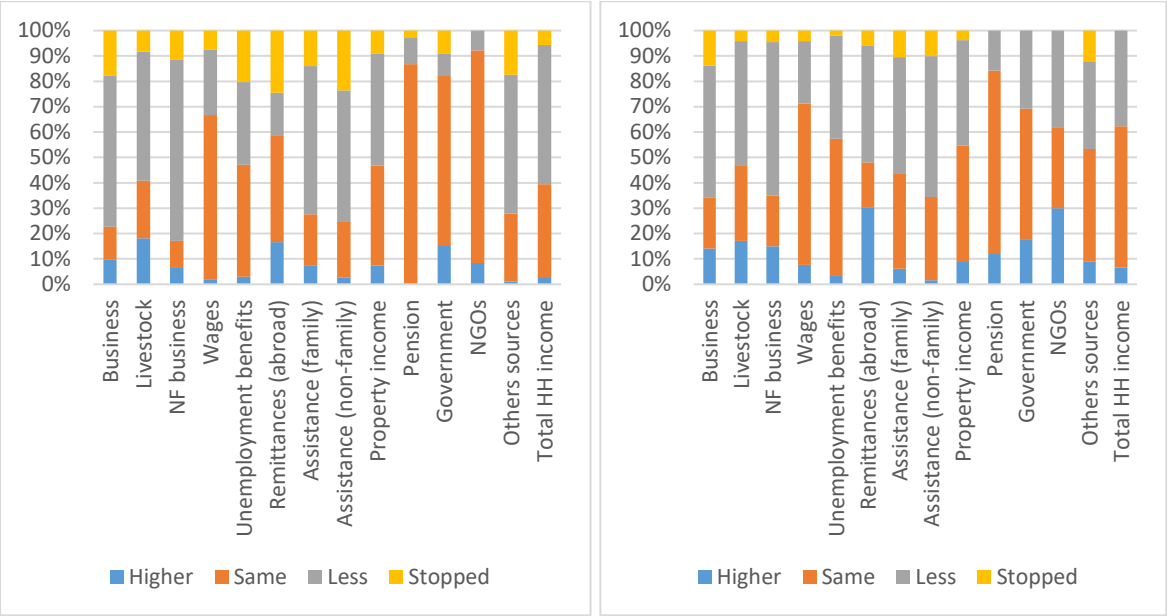
Various factors may have contributed to the rapid increase in poverty, especially in urban areas. Structurally, an underdeveloped agricultural sector and low economic growth have been insufficient to absorb the increasing workforce in rural areas, which has led to rapid urbanisation rates (a 4.18 per cent increase between 2020 and 2021) as more and more of this workforce have migrated to urban areas in search of job opportunities (IMF 2023; WDI 2024). Moreover, **earlier mixed methods analysis suggested that impoverishment was expected to occur in urban areas during 2015–20 because of load shedding, inflation, and the Covid-19 pandemic**, significantly affecting businesses and employment (Shepherd *et al*. 2021).

Analysis of phone survey data from 2020 confirms these trends. It indicates that **close to half of households with access to phones were not engaged in some work for pay in the week prior to the phone surveys from June and December 2020**, slightly decreasing over the two waves. Among households that were not working in June 2020, 44 per cent were working before the pandemic (authors' analysis of HFPS).

The majority of those who lost their jobs during the pandemic in 2020 worked in the tourism industry (71 per cent), manufacturing (39 per cent), personal services (39 per cent), and education (38 per cent), while only 8 per cent of typically rural agricultural workers experienced job losses over the same period (Finn and Zadel 2020).

The majority (over 50 per cent) of households also reported that their income was less than it was prior to the onset of Covid-19 (authors' analysis of HFPS). Informal workers and those working in the service sector in urban areas experienced particularly high rates of job and wage losses (World Bank 2020). In addition, up to 67 per cent of firms in the formal construction sector had reduced working hours and asked workers to take paid leave. A similar pattern was also observed in the formal manufacturing sector where 44 per cent of firms reduced working hours, and 50 per cent asked workers to take paid leave (Geda 2021). At the same time, phone survey analysis points to a decline in the proportion of respondents indicating that their income was less than it was before the pandemic between June and December 2020 across different sources of income (Figure 3.1.1).

Figure 3.1.1: Changes in income compared to pre-pandemic period in June (left) and December (right)

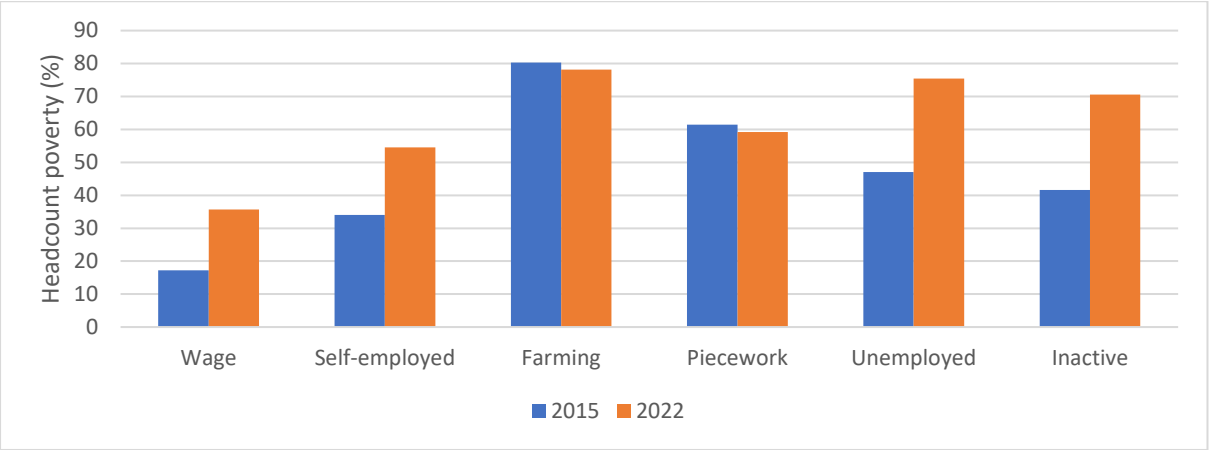


Source: analysis of HFPS (2020).

Further **disaggregating results by quintiles in 2021, 25–29 per cent of households across all quintiles noted that the main economic effect of the pandemic was job losses, while between 22 per cent (poorest quintile) and 30 per cent (richest two quintiles) noted instead that the main effect was that their income reduced**. In terms of income reduction, the differences were especially large in urban areas (32 per cent of households reported the main effect was reduced income) compared to rural areas (24 per cent of households), based on our analysis of SEIA data. More broadly, though, income loss was common even where it was not the main self-reported effect of the pandemic. Added to this, the effect of rising prices also put pressure on the urban households' purchasing power (World Bank 2020).

It is perhaps unsurprising then that **the highest increase in poverty (from 17.2 per cent in 2015 to 35.7 per cent in 2022) between 2015 and 2022 was recorded among households headed by people who reported being in wage employment**. At the same time, poverty rates among household heads in wage employment are lower than for other households (Figure 3.1.2). Moreover, as they were employed in 2022, this increase in poverty does not reflect sustained job losses, but rather income reduction. This could be the case, for example, if hours were still reduced, rates of wages per hour declined, or people kept their jobs but may have been furloughed on less than their previous rates.

Figure 3.1.2: Headcount poverty (per cent) by employment status of household head (2015–22)



Source: Zamstats (2023).

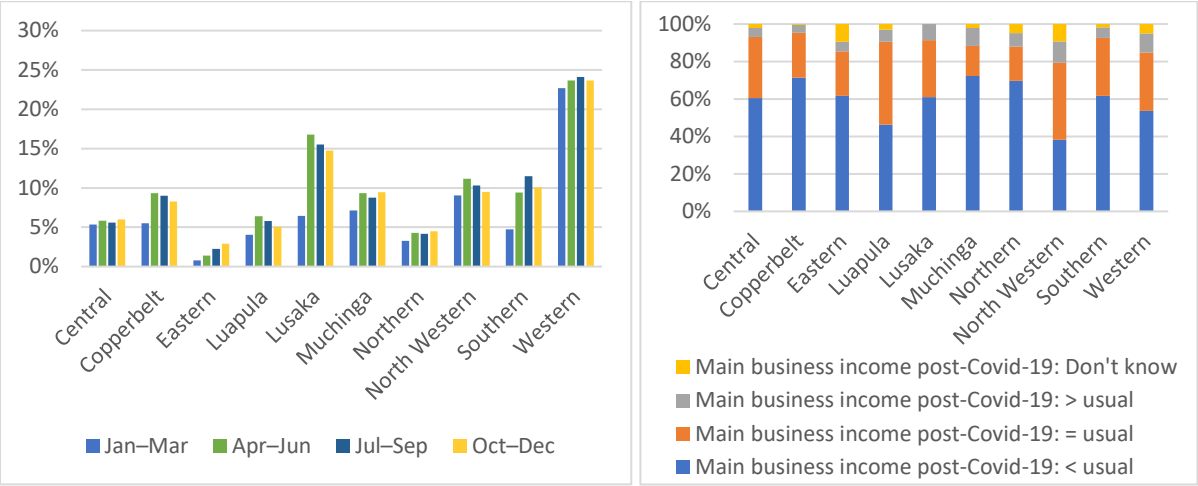
Regression analysis also indicates that households that primarily relied on remittances as their main income source before the pandemic were associated with a 25.5 per cent lower monthly expenditure in 2021 relative to households that primarily relied on wage or salary employment before the pandemic (Table A2, column 1). This may be because **many households in wage or salary employment were provided with opportunities to work remotely, while those who were relying on remittances saw this source dry up because of job losses/income reductions among remitters** caused by border closures and lockdown restrictions.

Lower income, albeit of a smaller magnitude, was also reported for household heads in agriculture (by 8 per cent) and those receiving support from family, friends, the government or its partners (by 14–16 per cent), according to regression results (Table A2, column 1).

Dramatic pressures on businesses

Most household heads who were not engaging in economic activities during 2020 attributed this to being unemployed and either looking or not looking for work. A smaller but notable share attributed this directly to the closure of their business due to the pandemic. This was most common in Western province, which may have been an effect of border closures. However, the biggest change over 2020 was observed in Lusaka, followed by Southern and Copperbelt provinces (Figure 3.1.3, left). For example, **while just under 3 per cent of household heads in Lusaka reported that they were not working between January and March 2020 on account of the business being closed due to the pandemic, this figure increased to 17 per cent between April and June 2020, only slightly decreasing to 15 per cent by the end of the year**. Moreover, the income of households' main businesses was less than usual since the pandemic among 40–70 per cent of households across provinces, with rates highest in Muchinga, Northern, and Copperbelt provinces (Figure 3.1.3, right). By area of residence, this was much higher in urban areas (69 per cent of households reported business income was lower since the pandemic) than rural areas (51 per cent of households).

Figure 3.1.3: Household heads not working due to Covid-19-related business closures in 2020 (left) and changes in business income by 2021 (right), by province

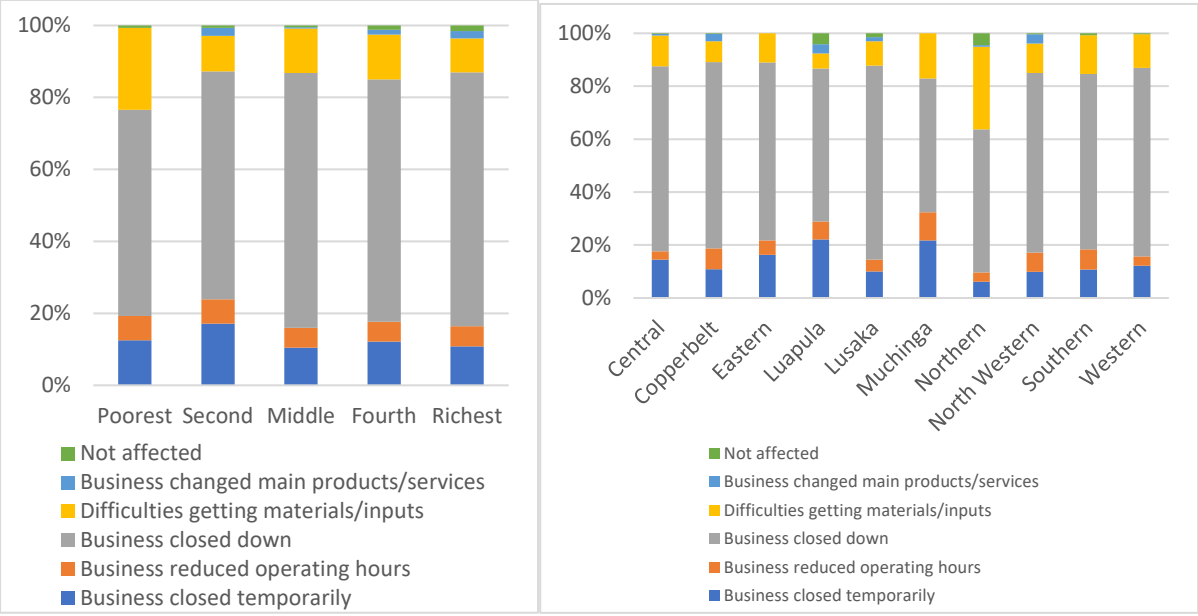


Note: work is defined as being in paid/self-employment/helping in family business without pay.

Source: analysis of SEIA (2021).

Households across expenditure quintiles, moreover, experienced challenges to their business operations during the pandemic. **Among the poorest quintiles and in Northern province especially, challenges in business operations occurred relatively more often due to difficulties obtaining materials and inputs for the businesses**, compared to comparator groups (Figure 3.1.4). It is perhaps for this reason that we also identify a significant association between business ownership and lower welfare among the poorest quintile in the regression results (Table A4, column 1).

Figure 3.1.4: How the pandemic affected businesses by quintile (left) and province (right)



Source: analysis of SEIA (2021).

These observations are especially worrying considering the role of non-farm enterprises (NFEs) in enabling household diversification as a form of risk mitigation in pathways out of poverty. Indeed, before the pandemic, **in 2015, having an NFE was associated with a lower probability of poverty for both urban and rural households** (Diwakar and Bwalya 2021). Yet, as evidenced over the three years of analysis, we observe a multitude of challenges in NFE operations. Indeed, it is only in North Western province that business ownership is

associated with higher welfare in 2021 relative to not owning a business (Table A3, column 7). Moreover, business ownership is associated with lower welfare across the distribution in urban areas (Table A4, columns 9–12), though this finding is reversed in rural areas (Table A4, columns 5-8) suggesting that these NFE-specific challenges were mainly amplified in urban areas of the country. Difficulties in NFE operations are likely to have caused the stark 20 percentage point increase in the rate of poverty among self-employed household heads by 2022 (compared to 2015) as shown in Figure 3.1.2. At the same time, there may also have been other difficulties; for example, Covid-19 restrictions reducing demand and labour opportunities, and coming after power outages, which would have also reduced business income and demand.

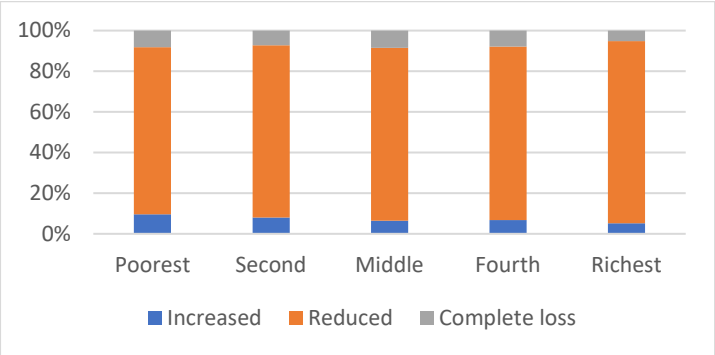
Continued high rates of rural poverty

In contrast, the agricultural sector, on which the majority of the rural population depend, was not as badly directly affected by the Covid-19 pandemic as other sectors, though it was still affected by increased input prices. A study by the United Nations Conference on Trade and Development (Geda 2021) reports that many private sector formal businesses in the agricultural sector (36 per cent) interviewed between the end of May and 5 June 2020 reported no change with regard to employment, compared to the pre-Covid-19 period. This is in stark contrast to the construction and manufacturing sectors noted above, which saw high rates of job loss. Furthermore, despite the Covid-19 pandemic, agriculture is one of the few sectors that registered growth as a result of the good weather experienced in the 2020 season, coupled with highly negative growth in the years directly prior to the pandemic (*ibid.*).

At the same time, poverty remained at a high level in rural areas where agriculture is the mainstay. In 2022, poverty remained concentrated among households where the head of the household was a farmer (78.2 per cent poverty rate) and lowest among those households where the head was in wage employment (35.7 per cent) (3.1.2). However, comparison between 2015 and 2022 shows that poverty increased across all categories of employment except for those households engaged in farming/fishing/forestry activities (from 80.3 per cent in 2015 to 78.2 per cent in 2022), and those engaged in piecework (from 61.4 per cent in 2015 to 59.2 per cent in 2022) (Zamstats 2023). These **results reaffirm that although poverty profiles are concentrated in rural areas (which is also unsurprising given the severity of pre-pandemic droughts in 2016 and 2019), during the pandemic engagement in agriculture acted as an important cushion for many people**.

Finally, when examining differences in income change by quintile in early 2021, changes at the extremes seem to be slightly more pronounced among the poorest quintile, which are typically rural households. For example, **8 per cent of households in the poorest quintile reported a complete loss of income and 10 per cent reported an increased income, compared to 5 per cent for both categories among the richest quintile** (Figure 3.1.5). The cases of increasing income could reflect income in agriculture growing in 2020 more broadly, on the back of severe drought in 2019. There were also provincial variations to this, where 12–13 per cent of households in Muchinga and North Western provinces reported a complete loss of income, down to 3–4 per cent in Northern and Luapula provinces. These findings of prevalent income loss among the poorest populations, which in 2015 comprised households that had expenditures nearly half that of the food poverty line, point to untenable destitution processes in the country.

Figure 3.1.5: Covid-19 income effects by quintile



Source: analysis of SEIA (2021).

Thus, although the agricultural sector may have been relatively cushioned from the economic crisis caused by the policy responses to Covid-19, the high rates of poverty in rural areas, where households depend on agriculture alongside potential destitution of rural households, are a serious cause for concern. The significant relationship between the household head's primary engagement in agriculture and lower welfare (Table A4, columns 1–4) likely reflects a reality where the majority of people in poverty are concentrated in rural areas. However, it may also at least partly signal continued challenges in the agricultural sector arising from increasing vulnerability to climate change and variability, as evidenced by increased frequencies of extreme events such as drought, seasonal floods and flash floods, extreme temperatures and dry spells, and the country's inadequate preparation for and response mechanism to ensuing disasters (Mwitwa 2018). Extreme weather events such as floods, droughts, and reduced rainfall are major risks for rural households, 90 per cent of which depend on rain-fed agriculture as their main economic activity (ZIPAR 2020).

Alongside this, low agricultural productivity and subsistence production can also be attributed to declining soil fertility, fish stocks, and deforestation, which are wider environmental factors. There have also been institutional failures including the long-running fertiliser subsidy, the almost exclusive policy and institutional focus on maize, and infrastructure and value chain weaknesses in a vast country with low population density. These are all factors that require further investigation.

3.2 Gendered drivers of vulnerability

Key messages

- The gap in poverty rates by gender of household head narrowed slightly in urban areas (from 7.9 to 6.4 percentage points) on account of a larger increase in poverty among men-headed households, perhaps as a result of their income sources declining by more than women's in urban areas. However, the gap widened in rural areas (from 2.3 to 6.1 percentage points) between 2015 and 2022.
- The lockdown measures during Covid-19 affected both output and employment in the informal sector, and especially those sectors with a large representation of women workers.
- There was a notable decline in women's empowerment over the pandemic, marked by a reduction in joint decision-making, and a perceived rise in violence against women and children in the community from the onset of the pandemic into early 2021.

Women's agency is often seen as an important contributing factor to pathways out of poverty (Diwakar and Shepherd 2023). Yet, **gender-disaggregated findings from analysis in Zambia in 2015 pointed to disadvantages experienced by women-headed households, especially those already experiencing poverty** (Diwakar and Bwalya 2021). One plausible

contributing factor is that women-headed households have fewer working-age members and that they tend to be more vulnerable, often with only one (woman) breadwinner (Harasty, Kwong and Ronnås 2019). It could also reflect fewer assets or savings, weak social networks, limited access to credit, or a combination of these.

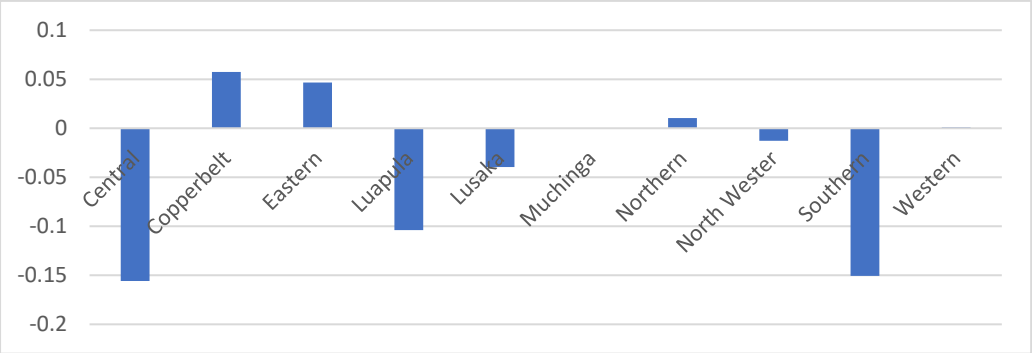
During and since the pandemic, women-headed households have continued to be disproportionately affected by poverty. For example, **while the gap in poverty rates by gender of household head narrowed slightly in urban areas (from 7.9 to 6.4 percentage points),[5] it widened in rural areas (from 2.3 to 6.1 percentage points) between 2015 and 2022** (Zamstats 2023). The widening gap in poverty rates by household gender and area of residence could at least partly be explained by national Covid-19 policies in the country that depressed agricultural-specific interventions and gender-sensitive initiatives, which contributed to challenges of recovery in rural areas (Manda 2022). For example, women-headed households were more likely to face or complain about land shortages during the pandemic than their counterparts in men-headed households, which resulted in them reducing the number of crops they cultivated during the pandemic compared to men-headed households (*ibid.*). Women-headed households were also more likely (70 per cent) to report household/family conflicts over land during the pandemic than men-headed households (40 per cent) (*ibid.*). These are also likely to be structural issues not specific to the pandemic.

At the same time, **the lockdown measures affected both output and employment in the informal sector, and especially those specific economic sectors with a large representation of women workers**. A rapid gender impact assessment of Covid-19 in Zambia (Government of Zambia 2021) shows that informal sectors, which are widely heterogenous and employ about 76 per cent of women workers in Zambia were disproportionately affected by the Covid-19 pandemic due to reductions in the number of person-to-person interactions that characterise the informal sectors. These restrictions affected informal traders, and the wholesale and retail industries, which are dominated by women. Workers in these sectors had low pay and poor working conditions, and lacked social protection (such as pension, healthcare, unemployment insurance) even prior to Covid-19 (*ibid.*).

The pandemic also resulted in changes in decision-making on major household expenses within the household in both rural and urban areas in 2021. Although it led to negligible change among the poorest quintiles, **the second poorest quintile saw a large decrease in joint decision-making, by 11 percentage points, during the pandemic compared to before it. Instead, this decrease in joint decision-making was by 5 percentage points among the richest quintile**. By province, a decrease in joint decision-making was especially pronounced in Central, Southern, and Luapula provinces. However, in Copperbelt and Eastern provinces, in particular, it contributed to around a 5 percentage point increase in joint decision-making (Figure 3.2.1).

[5] This stems from a larger increase over time in poverty rates of urban men-headed households, which may emerge, for example, if men's income sources declined more than women's in towns.

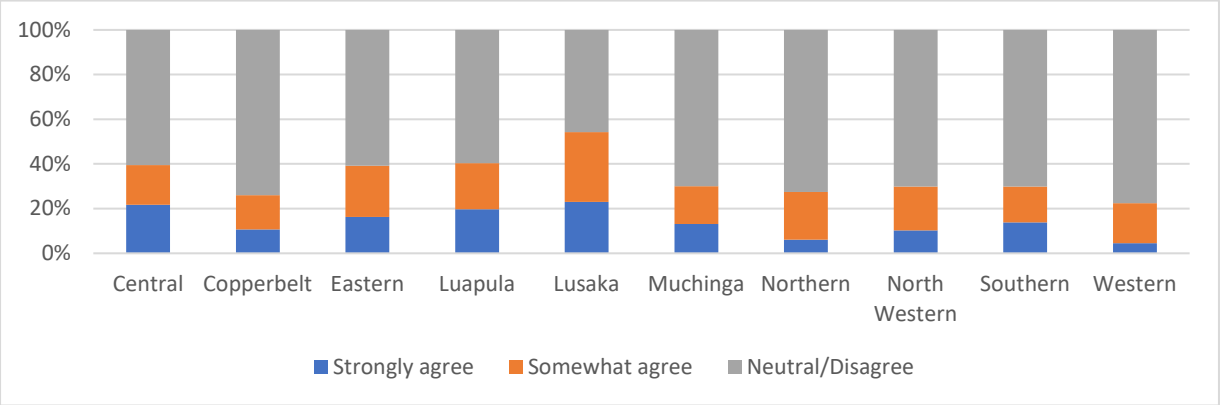
Figure 3.2.1: Percentage point change in joint decision-making on major household expenses, by province



Source: analysis of SEIA (2021).

Accompanying loss in empowerment across many provinces has also been the perceived rise in violence against women persisting into 2021 (Figure 3.2.2). **The perceived rise in violence against women in the community since March 2020 was most commonly noted in Lusaka followed by Central province, both urban provinces where poverty rates had also considerably increased.** This perceived rise in violence against women was mirrored by a similar perceived rise in violence against children in the community. Taken together, Figure 3.2.1 and Figure 3.2.2 suggest that Central and Lusaka provinces have suffered especially badly. These are the two urbanised provinces that experienced the largest increases in poverty, suggesting that reduced household economic wellbeing has translated into reduced agency and increased insecurity for women.

Figure 3.2.2: Perceived rise in violence against women in the community since March 2020, by province



Source: analysis of SEIA (2021).

3.3 Limited resilience through education

Key messages

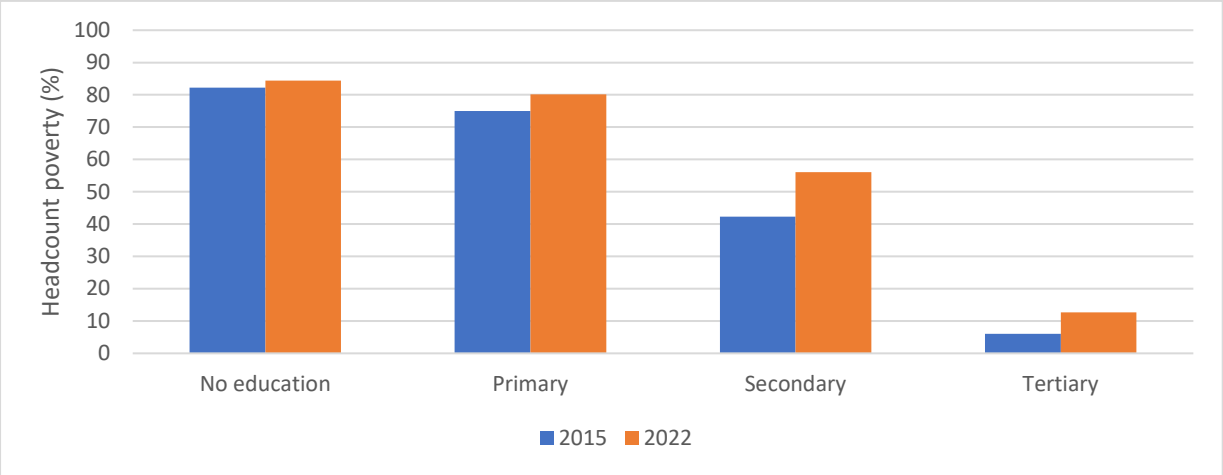
- Household heads with secondary and tertiary education experienced the largest increase in poverty between 2015 and 2022. These findings align with the increase in urban poverty, as well as a contraction in the number of formal sector jobs between 2017 and 2021.
- Intergenerational persistence of poverty is also cause for concern, especially when considering the pandemic's impact on children's education. Children in the poorest households were often unable to access digital forms of learning, were less able to easily do their schoolwork, and worried more about failing their exams. They were also less likely

to have returned to school by the end of 2020, often due to financial constraints either linked or unlinked to the pandemic.

Another common pathway identified in poverty escapes in Zambia before the pandemic has been through completion of at least lower secondary education (Diwakar and Bwalya 2021), which was also curtailed during the pandemic. Indeed, though the poverty rate was highest among those households with heads who had no education (84.4 per cent), reducing to 56.1 per cent among those households with heads who had secondary education, **the increase in poverty between 2015 and 2022 was highest among those households whose heads had attained the highest level of education** (Zamstats 2023).

For instance, headcount poverty increased by 2.2 percentage points (from 82.2 per cent in 2015 to 84.4 per cent in 2022) among those households with heads who had no education, and by 5.1 percentage points (from 75.0 per cent to 80.1 per cent) among those households with heads that had only attained primary education. However, the increase in poverty was much higher among households whose heads had attained secondary education (13.8 percentage points), and more than doubled (from 6.0 per cent to 12.7 percentage points) for those households whose heads had attained tertiary education, albeit from a much lower base, implying that the protective effects of higher education waned over time (*ibid.*). It also implies significant impoverishment of these previously largely non-poor groups.

Figure 3.3.1: Headcount poverty (per cent) by education level of household head (2015–22)



Source: Zamstats (2023).

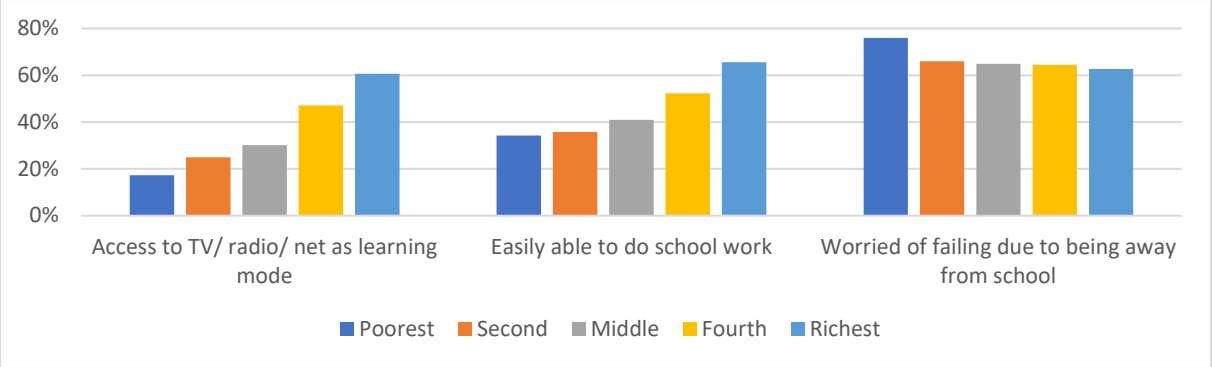
Even though education has been shown to reduce exposure to poverty by several means, the most important of these include the likely increase in employment opportunities and falling fertility (Harasty *et al*. 2019). In 2021, the employed population who had attained secondary education (grades 8–12) had the highest percentage share of the employed population (56.4 per cent), while those with nursery education as the highest level attained had the lowest share (0.1 per cent) (MLSS and Zamstats 2022). There is often a clear association between informal work with lower pay and low education levels. **While people with little or no education are almost all informally employed, secondary education is associated with a relatively small reduction in informal employment, while informality rates drop very significantly for workers with tertiary education** (Tassot, Pellerano and La 2019). This is an important point, explaining why secondary education was not a protective factor when the informal economies were so vulnerable to pandemic policy responses and power outages.

The positive correlation between poverty and education was somewhat unexpected, especially as the Covid-19 pandemic was shown to least affect those employed in the formal sector, who tend to have highest qualifications. At the same time, these findings align with the increase in urban poverty noted above, where populations are typically much richer and better educated relative to rural areas. Another explanation for this result could be the mismatch between the rate at which the country is producing graduates and industries' capacity to absorb them. This may be especially true in a contracting economy, where the number of formal jobs with high salaries is reducing. For example, **the number of jobs in the formal sector reduced from 1,096,832 in 2017 to 941,292 in 2019 (ILO 2021). As of 2021, the number of formal jobs had dropped to 848,413** (MLSS and Zamstats 2022). The reduction in the number of formal jobs, which are relatively high paying and in which the majority of those with high qualifications are engaged, could partly explain the increase in poverty among those with qualifications.

The 2022 snapshot of poverty pointed to an increase in poverty among people with tertiary education, but at the same time, there have also been concerns around the intergenerational persistence of poverty amplified during the pandemic. Indeed, we know that access to education and learning among children in poor households considerably suffered during the pandemic around the world (Shepherd *et al*. 2023). In Zambia, too, **children in the poorest households were often unable to access digital forms of learning through the television, radio, or internet, and perhaps as a result were also less able to easily do their schoolwork, and**

worried more about failing their exams (Figure 3.3.2). Regionally, children in households in Eastern province had the lowest access to forms of digital learning (24 per cent of households), followed by 38 per cent of households in Western and Central provinces, up to 57–58 per cent of households in Copperbelt and Lusaka, mostly reflecting urban/rural inequalities (authors' analysis of SEIA 2021 data).

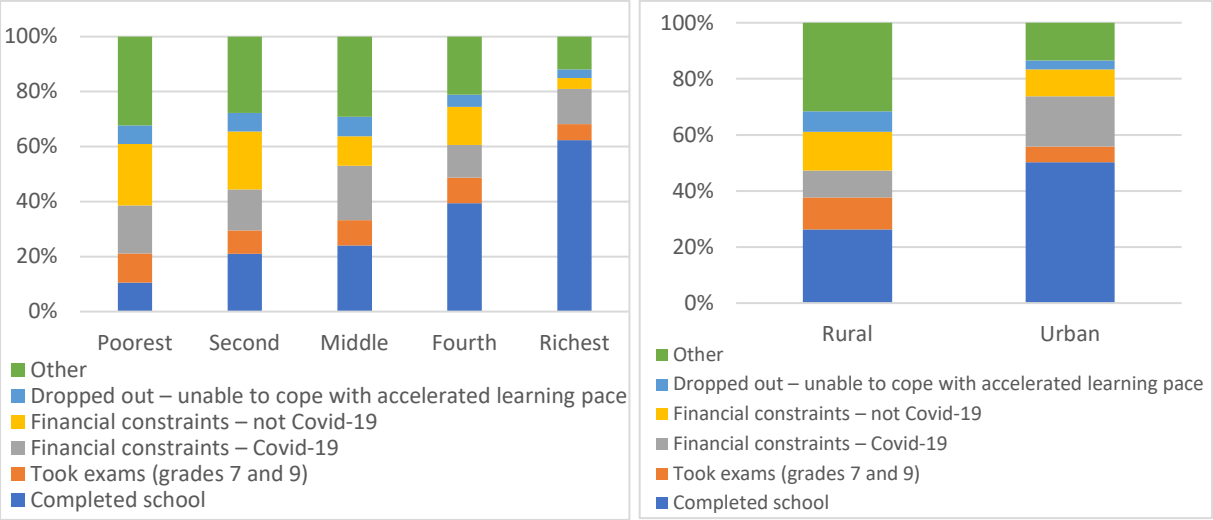
Figure 3.3.2: Learning-related concerns, by quintile



Source: analysis of SEIA (2021).

Children in poor households were also less likely to have returned to school by the end of 2020, often due to financial constraints either linked or unlinked to the pandemic (Figure 3.3.3). By area of residence, financial constraints not linked to the pandemic were particularly pronounced in rural areas, though Covid-19-related financial constraints were common in urban areas.

Figure 3.3.3: Why children were not attending school, by quintile (left) and area of residence (right)



Source: analysis of SEIA (2021).

4. Coping with and since the pandemic

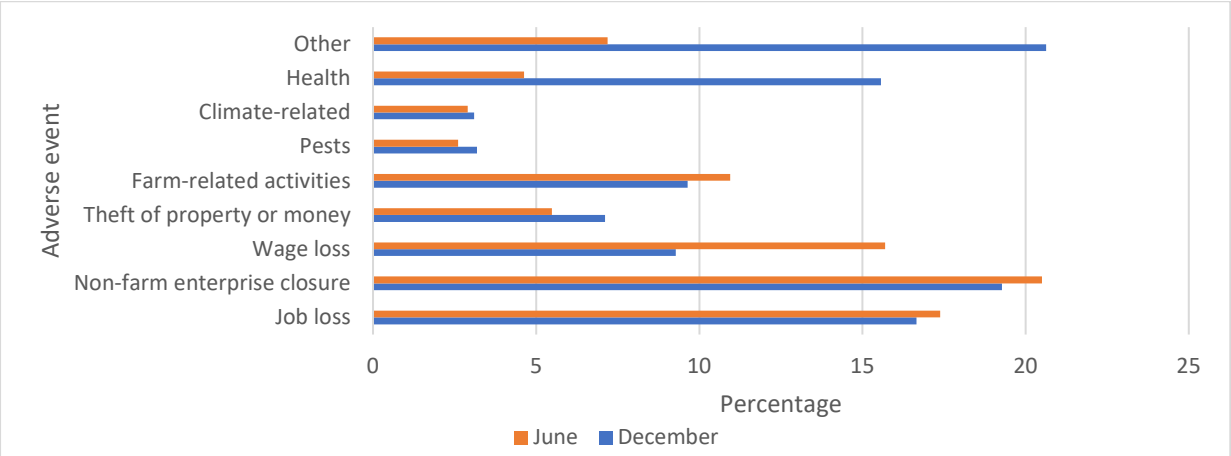
Key messages

- Ill health shocks more than tripled between June and December 2020.
- Food insecurity was also much more pronounced among households that subjectively reported being in extreme poverty in 2020 than among those that did not.
- Other than relying on their own production or starting a business, the poorest quintile were often much less likely to be able to adopt coping strategies to deal with economic shocks since the pandemic, reflecting their condition of extreme precarity.
- Very few households (less than 2 per cent) from the phone surveys reported that they had received any assistance in form of either free food, cash transfers for women, direct cash transfers, and other in-kind transfers during the pandemic in 2020. There was also limited variation by self-reported poverty status, which might indicate a degree of mistargeting.

Shocks and coping responses

An erosion of coping capacities amid various shocks and stressors has marked the years during and since the pandemic. During the onset of the pandemic and over the course of 2020, households experienced adverse events in the form of thefts of property or money, farm-related shocks, pests, and climate- and health-related shocks (Figure 4.1).

Figure 4.1: Households experiencing adverse events (2020)



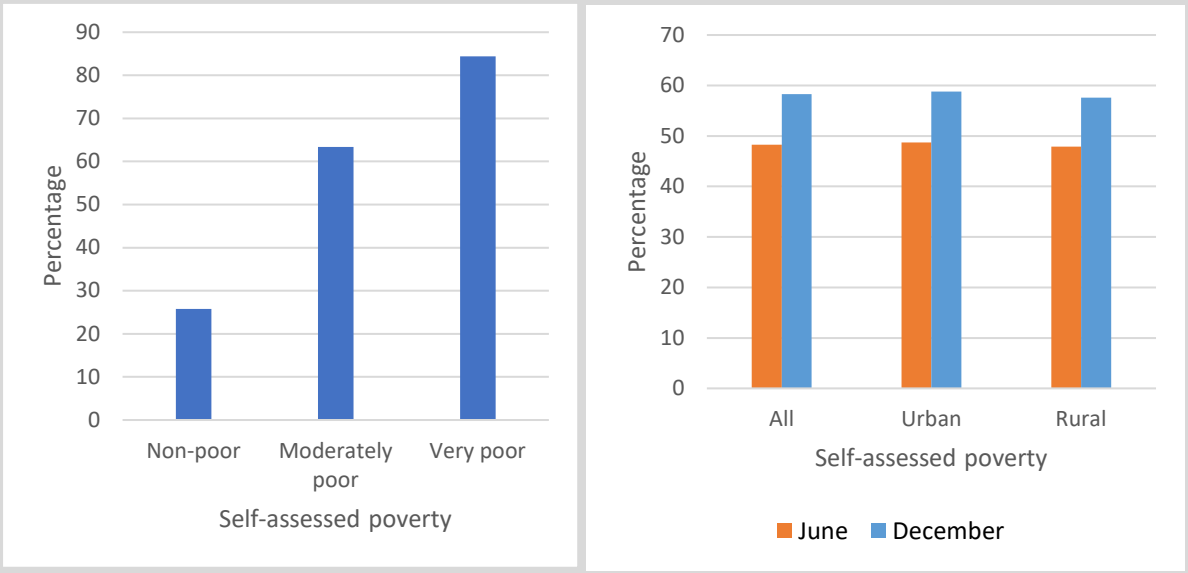
Source: analysis of HFPS (2020).

The most common type of shock was non-farm business closure (20.5 per cent of households), followed by job loss (17.4 per cent), and wage loss (15.7 per cent). **Ill health shocks more than tripled between June and December 2020** (Figure 4.1). Other than doing nothing, likely due to an absence of options, most households engaged in income-generating activities, seeking assistance from family and friends, borrowing from family and friends, and relying on savings in responses to the common shocks. Food insecurity also increased during the pandemic, as shown in Box 4.1.

Box 4.1: Food insecurity (2020)

The proportion of households experiencing moderate-to-severe food insecurity significantly increased in 2020, from 48.3 per cent in June to 58.3 per cent in December (Figure 4.2). This was prevalent across rural and urban areas of the country, though particularly pronounced among the poorest (self-reported) households (84.4 per cent) compared to the non-poor (25.8 per cent) and moderately poor (63.4 per cent). Interestingly, there were no significant differences in food insecurity across areas of residence (urban/rural), suggesting that poverty was the main differentiator in experiences of food insecurity.

Figure 4.2: Prevalence of moderate-to-severe food insecurity, by self-assessed poverty status (left) and area of residence (right)

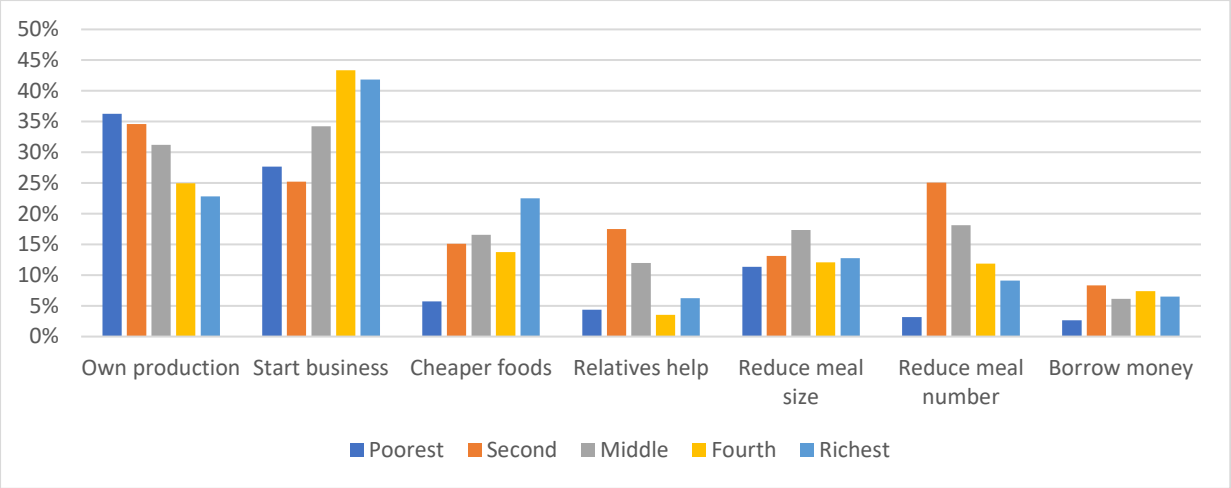


Source: analysis of HFPS (2020).

By 2021, the most common way of coping with economic shocks during the pandemic was to start a business, which was much more likely to be possible for richer households (Figure 4.3). At the same time, the high rates of business closures and business-related challenges noted earlier suggest that this may be a particularly risky coping mechanism. This coping response was followed by relying on own production (more common among largely agrarian, rural, poorer households). The third most common strategy among the poorest households was to reduce the size of their meals, thus further aggravating food insecurity, while richer households instead were more likely to rely on cheaper foods.

The poorest households were also less likely to be able to rely on relatives for help, especially when compared to households in the second poorest quintile where social networks may have been slightly stronger. This is perhaps also because the poorest households include many women-headed households, households with people with disabilities, and households headed by older people who may have smaller or less developed networks. In fact, **other than relying on own production or starting a business, households in the poorest quintile were often much less likely to be able to adopt coping strategies to deal with economic shocks since the pandemic, reflecting their condition of extreme vulnerability**.

Figure 4.3: Coping responses to economic shocks during the pandemic



Note: includes coping strategies that were adopted by at least 5 per cent of households in response to economic shocks during the pandemic.

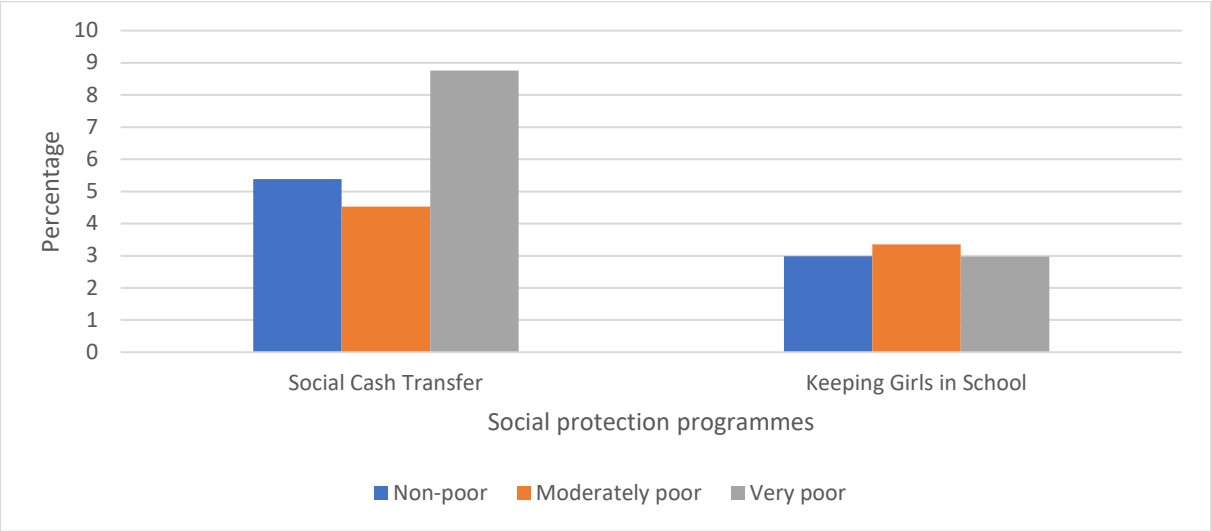
Source: analysis of SEIA (2021).

Social assistance during the pandemic

Driving the need to rely on adverse forms of coping was the limited assistance available to households through other programmes. **Indeed, very few households (less than 2 per cent) from the phone surveys reported that they had received any assistance in the form of either free food, cash transfers for women, direct cash transfers, and other in-kind transfers during the pandemic in 2020.** This could also partly reflect phone surveys more easily reaching wealthier households with access to mobile phones. For those who received social assistance, the main source was the government. When examining access to social protection programmes by self-reported poverty status, we see some differences. The proportion of households indicating that they were very poor that also indicated they had at least one member who was registered for the Zambian Social Cash Transfer (SCT) programme was nearly twice as great as for households indicating that they were moderately poor or non-poor, though differences are statistically insignificant.

The SCT programme supposed to be targeted at households headed by older people (aged 65 years or older), households with members with a severe disability, households with members who are chronically ill and receiving palliative care, and child-headed households, as well as women-headed households with at least three children (MCDSS 2022). Similar results are obtained for registration for the Keeping Girls in School programme, which is supposed to be targeted at girls and young women aged under 25 years living in SCT households that have qualified for secondary school.

Figure 4.4: Self-assessed poverty and access to selected social protection programmes



Source: analysis of HFPS (2020).

5. Conclusion and way forwards

This study has attempted to investigate the reasons behind the increase in poverty in Zambia between 2015 and 2022. Although poverty in Zambia is more pronounced in rural than urban areas, the increase in poverty was much higher in urban areas. This increase can be explained by a confluence of factors, including load shedding, the Covid-19 pandemic, which considerably negatively affected businesses and employment, and the effect of rising prices, which also put pressure on households' purchasing power. Moreover, although the agricultural sector was not as badly affected by economic crises caused by Covid-19 as other sectors, there are signs of destitution among the poorest households, many of which are employed in agriculture. Finally, women-headed households have experienced additional and interconnected disadvantages (and women more broadly, especially in urbanised provinces that have experienced high increases in poverty). A period of prolonged, intersecting crises, alongside limited social assistance in response, has eroded coping capacities and left households in conditions of considerable precarity.

In this context, we suggest a set of prioritised policy recommendations.

5.1 Support for the urban informal economy

The informal sector in Zambia employs an estimated 73.2 per cent of the labour force (Zamstats 2022). These informal establishments are predominantly rural agricultural operations, run by farmers with low skills and generating low revenues. Women are more likely than men to be informally employed. Even before the pandemic, living conditions were very poor among the informally employed compared to those who were formally employed. For example, whereas only 5.1 per cent of formal workers could be classified as living in extremely poor households, over 60 per cent of informal workers lived in extremely poor households before the pandemic (Tassot *et al*. 2019). With the onset of the Covid-19 pandemic, the effects of pandemic policy responses worsened the situation of those employed in the informal sector. For example, the restriction of movements slowed business for informal traders, while the 'working from home' option for them meant losing their jobs (as the nature of their work did not enable them to work from home or, in other cases, their casual contracts meant that they did not receive pay during lockdowns), and for many, their livelihoods (ILO 2020).

Provision of social protection for the urban informal sector can provide an opportunity for business owners and workers to build human capital, avoid the need to sell off productive assets in the event of shocks, and promote savings to build resilience. Specifically, Guven and Karlen (2020) suggest that in addition to social safety net programmes, governments should develop innovative social insurance plans, and productivity-enhancing measures across the income spectrum to support the urban informal sector effectively. Even though the government, with support from other partners, implemented the Covid-19 Emergency Cash Transfer to support vulnerable households (including informal economy workers) across 22 districts,[6] many workers never received these funds. Similarly, even though the government announced a number of economic stimulus packages that were supposed to be available to every Zambian in business, which included informal economy workers, very few Zambian businesses had accessed these funds due to the hard conditions attached to stimulus packages, which most informal economy workers could not meet (Kabelenga and Chola 2021).

Alongside this, enhancing productivity of the urban informal sector could be supported through a review of legislation that recognises the economic contribution of the urban informal sector, as well as protecting rights of those engaged in the informal sector in general, incorporating the space needs of informal workers into urban planning to avoid conflicts with local government (UN Habitat 2016). Providing market spaces would help address the perennial problem that councils in urban areas of Zambia face with vendors who end up trading in undesignated spaces and are always having their infrastructure, such as stalls, demolished.

In addition, the benefits of forming cooperatives of informal sector groupings conducting similar activities so that they can easily access financing could be investigated. This is already happening through the Citizens Economic Empowerment Commission (CEEC) and the Constituency Development Fund (CDF). However, assessments of performance of CEEC programmes show a multitude of problems that need to be addressed to increase accessibility for those in the informal sector. For example, a study by Hapompwe, Kukano and Sichoongwe (2021) established that CEEC loans failed to benefit small and medium-sized enterprises. This was mainly due to strict conditions, such as the need to generate equity/collateral, and documentation requirements before approval of loans, as well as the low capital base of the CEEC.

With regard to the CDF, evidence shows that it has been prone to abuse. In addition, young people in Zambia have limited access to empowerment funds due to corruption that comes in the forms of political patronage, nepotism, connections, bribery, and political discrimination, among others (Simuyandi 2018). There is also evidence of cooperatives being formed to access CDF funds. These cooperatives are usually poorly managed and often disband after receiving funding (JCTR 2023). Ideally, this limitation can be mitigated by targeting people who are already operating in the informal sector, as opposed to those intending to start who are usually simply grouping together to access funds, which they later misuse. Typically, business development programmes target the wealthiest, most productive informal firms, leaving a question about how to support more typical micro-businesses.

5.2 Enabling rural pathways out of poverty

The high rates of rural poverty point to the need to create opportunities in rural areas, including for the large share of young people who may otherwise unsuccessfully migrate to

[6] Chilanga, Chililabombwe, Chingola, Chipata, Chirundu, Chisamba, Kabwe, Kafue, Kalulushi, Kasama, Kazungula, Kitwe, Livingstone, Luangwa, Lusaka, Mansa, Mongu, Mpika, Mufulira, Nakonde, Ndola, and Solwezi.

urban areas in an attempt to forge better futures. Using the CDF to fund youth cooperatives could be one idea worth exploring. Alongside this, the idea of decentralising the CDF could help increase resources for constituencies. However, there is a need to ensure the policy of employing locals to work on CDF projects is adhered to as it is one way of creating employment outside the agricultural sector. This also calls for skills development, so local rural young people can benefit, which CDF projects can also be used for.

In addition, NFEs should be promoted among rural households as a way of diversifying incomes from rain-fed agriculture, which is becoming increasingly vulnerable due to climate change. Several measures have been suggested as a way of promoting the rural non-farm sector. For example, Lanjouw (1999) suggests creating a mediating environment through education and infrastructure. Efforts to improve education levels in rural areas are likely to promote employment in high income, non-farm occupations, while provision of infrastructure such as roads, power, and telecommunications are likely to reduce transaction costs and promote investment. Although low rural population densities present a challenge for infrastructure provision, introducing equity considerations as a principle in transport and other policies can help balance project appraisals that may otherwise disregard distributional effects (Bisachi *et al*. 2021).

5.3 Strengthening women's empowerment and children's wellbeing

Finally, underpinning these efforts should be measures to support human development and women's empowerment. In this context, programmes aimed at reducing gaps in education due to poverty and gender, particularly for secondary education and beyond, will help create economic opportunities for women and men. This is already being done through provision of bursaries in secondary and tertiary institutions that give preference to girls, as well as policies such as the re-entry policy for girls who leave school due to pregnancy.

However, the bursaries scheme needs to be scaled up tremendously if the gender gap is to be narrowed, while more needs to be done to ensure increased use of the re-entry policy. Factors such as care for babies, childcare expenses, and stigma deter girls from returning to school. Provision of additional financial support, counselling, and sensitisation of parents on the need to assist girls with childcare would increase re-entry rates into schools after pregnancy. There is also evidence of improvement in school enrolment, attendance, and retention of children from SCT households that were enrolled in the Keeping Girls in School programme (MCDSS 2021). However, this evaluation also showed that the programme is not being implemented in all districts, hence the need for scaling-up.

There is also a need to address the increasing levels of violence against women that arise from the increase in poverty levels. In addition to campaigns aimed at increasing awareness about women's rights, there is a need to increase access for women to financial empowerment programmes such as women's savings groups and cooperatives. These programmes not only empower women financially and reduce their dependence on men, but also provide an avenue by which women can learn about their rights and gain local support.

In all these efforts, paying attention to the dimensions of area of residence, gender, and child wellbeing as intersecting and reinforcing factors that may amplify challenges and constrain recovery prospects will be important in ensuring the effectiveness of poverty eradication in the country.

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Annexe

Table A1: Average values of key variables (2021)

Variable	Mean	Standard deviation	Min.	Max.
log(monthly per capita expenditures)	7.61	0.95	2.08	14.51
Household size (no.)	5.96	2.57	1	21
Women-headed household (%)	0.25	0.43	0	1
Age of household head (years)	43.82	13.73	12	90
Household head never married (%)	0.04	0.20	0	1
Household head is married or co-habiting (%)	0.77	0.42	0	1
Household head is widowed, divorced, or separated (%)	0.18	0.39	0	1
Household head completed primary education (%)	0.22	0.42	0	1
Household head completed secondary education or higher (%)	0.48	0.50	0	1
Household head primarily employed in agriculture (%)	0.41	0.49	0	1
Business ownership (%)	0.25	0.43	0	1
Number of household assets	5.70	4.07	0	23
Household has electricity (%)	0.37	0.48	0	1
Rural residence (%)	0.56	0.50	0	1

Source: analysis of SEIA (2021).

Table A2: Correlates of per capita expenditures (linear regressions)

Variable	(1)	(2)
Household size	0.0626***	0.0627***
	(0.00413)	(0.00416)
Female household head	0.0316	0.0239
	(0.0265)	(0.0260)
Age of household head	0.00102	0.000603
	(0.000628)	(0.000623)
Marital status [ref=never married]		
Household head is married or co-habiting	–0.0350	–0.0289
	(0.0336)	(0.0341)
Household head is widowed, divorced, or separated	–0.0962**	–0.0900**
	(0.0378)	(0.0379)
Household head completed primary education	0.0593**	0.0586**
	(0.0244)	(0.0246)
Household head completed secondary education or higher	0.203***	0.210***
	(0.0262)	(0.0262)
Household head primarily employed in agriculture		–0.0323
		(0.0301)
Business ownership		0.0100
		(0.0202)
Main income pre-Covid-19 [ref=salary/wages]		
Own business/trade	–0.0187	
	(0.0230)	

Street selling	–0.0885	
	(0.0632)	
Agriculture/forestry/fishing	–0.0800**	
	(0.0374)	
Support from family/friends	–0.157**	
	(0.0651)	
Support from government/partners	–0.144*	
	(0.0791)	
Remittances	–0.255***	
	(0.0672)	
Number of household assets	0.132***	0.134***
	(0.00675)	(0.00642)
Household has electricity	0.120***	0.128***
	(0.0338)	(0.0349)
Rural residence	0.00757	0.00635
	(0.0312)	(0.0312)
Province controls	Yes	Yes
Constant	6.394***	6.357***
	(0.0858)	(0.0828)
Observations	47,598	47,598
R–squared	0.632	0.630

*Note: standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1*

Table A3: Correlates of per capita expenditures by province, linear regressions

	Central	Copperbelt	Eastern	Luapula	Lusaka	Northern	North Western	Southern	Western	Muchinga
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Household size	0.0940***	0.0603***	0.0489***	0.0293**	0.0463***	0.0587***	0.0859***	0.0592***	0.0839***	0.0482***
	(0.00814)	(0.0116)	(0.0124)	(0.0120)	(0.00778)	(0.0117)	(0.00840)	(0.00582)	(0.00954)	(0.0111)
Women-headed household	0.0653	–0.0518	–0.0186	0.0690	0.0776*	0.00825	0.0389	0.0378	–0.0375	0.0560
	(0.0897)	(0.0548)	(0.0587)	(0.147)	(0.0412)	(0.0722)	(0.135)	(0.0984)	(0.106)	(0.0732)
Age of household head	0.00211	–0.00171	–0.00227*	0.00281	0.00285*	0.00191	0.000510	–0.00255	–0.00171	0.00309*
	(0.00223)	(0.00195)	(0.00124)	(0.00177)	(0.00142)	(0.00222)	(0.00182)	(0.00338)	(0.00133)	(0.00148)
Marital status [ref=never married]										
Household head is married or co-habiting	0.106	–0.111*	0.121	–0.0118	–0.171**	–0.00416	–0.0227	0.277*	–0.0288	0.0547
	(0.0874)	(0.0551)	(0.129)	(0.0946)	(0.0581)	(0.0799)	(0.106)	(0.146)	(0.111)	(0.0937)
Household head is widowed, divorced, or separated	0.0830	–0.0582	–0.0351	–0.105	–0.231***	–0.0332	0.00263	0.216	–0.0889	–0.162*
	(0.125)	(0.0905)	(0.144)	(0.124)	(0.0531)	(0.142)	(0.129)	(0.171)	(0.123)	(0.0829)

Household head completed primary education	0.242***	0.0119	–0.0115	0.0673	–0.0433	0.0741	0.167***	0.0898	0.0922	0.0154
	(0.0481)	(0.0719)	(0.0624)	(0.0587)	(0.0829)	(0.0657)	(0.0426)	(0.0961)	(0.0562)	(0.0826)
Household head completed secondary education or higher	0.438***	0.152**	0.00442	0.180***	0.206**	0.170**	0.288***	0.177	0.243***	0.0996
	(0.0779)	(0.0680)	(0.0635)	(0.0492)	(0.0805)	(0.0540)	(0.0718)	(0.0998)	(0.0637)	(0.0932)
Household head primarily employed in agriculture	–0.151**	0.0660	–0.0505	–0.0836	0.161	–0.288**	–0.0347	–0.00733	0.0192	–0.0205
	(0.0601)	(0.0751)	(0.0818)	(0.0874)	(0.214)	(0.0965)	(0.0709)	(0.0753)	(0.0563)	(0.0979)
Business ownership	–0.0260	0.0236	0.0328	0.0384	–0.00150	–0.137	0.203***	–0.0768	0.0159	–0.0262
	(0.0729)	(0.0364)	(0.0766)	(0.0846)	(0.0333)	(0.0999)	(0.0623)	(0.120)	(0.0643)	(0.0873)
Number of household assets	0.134***	0.127***	0.123***	0.138***	0.149***	0.148***	0.130***	0.110***	0.129***	0.105***
	(0.0105)	(0.00846)	(0.00862)	(0.0108)	(0.0186)	(0.00746)	(0.00741)	(0.0116)	(0.0101)	(0.0252)
Household has electricity	0.0406	0.253***	0.0866	0.377***	–0.00752	0.106	0.330***	0.247***	0.0553	0.265*
	(0.105)	(0.0619)	(0.114)	(0.0624)	(0.0445)	(0.0585)	(0.0914)	(0.0787)	(0.0824)	(0.136)
Rural residence	0.0511	0.0563	–0.133	0.104*	–0.199**	0.0344	0.259***	–0.0956	0.0117	–0.0564
	(0.0684)	(0.0902)	(0.0768)	(0.0584)	(0.0719)	(0.158)	(0.0764)	(0.0836)	(0.107)	(0.123)

Constant	5.872***	6.690***	6.667***	6.048***	6.617***	6.203***	5.749***	6.271***	6.309***	6.286***
	(0.134)	(0.0832)	(0.167)	(0.199)	(0.112)	(0.118)	(0.203)	(0.213)	(0.162)	(0.174)
Observations	4,248	5,990	5,557	4,969	5,653	3,311	4,815	3,587	5,361	4,107
R-squared	0.559	0.594	0.459	0.478	0.599	0.592	0.425	0.482	0.543	0.417

*Note: standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1*

Table A4: Correlates of per capita expenditures by quintile, overall and by area of residence, simultaneous quantile regressions

	Overall				Rural				Urban			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Variable	q20	q40	q60	q80	q20	q40	q60	q80	q20	q40	q60	q80
Household size	0.0645***	0.0641***	0.0595***	0.0603***	0.0643***	0.0623***	0.0624***	0.0629***	0.0661***	0.0604***	0.0545***	0.0569***
	(0.00145)	(0.00121)	(0.00156)	(0.00151)	(0.00271)	(0.00205)	(0.00262)	(0.00286)	(0.00200)	(0.00199)	(0.00151)	(0.00246)
Women-headed household	0.0324**	0.0585***	0.0472***	0.00885	–0.0308	0.00827	0.0213	–0.0305*	0.0966***	0.0784***	0.0726***	0.0438**
	(0.0128)	(0.0113)	(0.0145)	(0.0146)	(0.0233)	(0.0202)	(0.0204)	(0.0175)	(0.0213)	(0.0130)	(0.0154)	(0.0184)
Age of household head	0.00085**	0.00095**	0.00068**	0.00036	0.00092*	0.00195***	0.00207***	0.00033	0.00179***	0.00032	0.00046	0.00071*
	(0.000359)	(0.000318)	(0.000278)	(0.000260)	(0.000474)	(0.000497)	(0.000497)	(0.000502)	(0.000384)	(0.000371)	(0.000319)	(0.000402)
Marital status [ref=never marr.]												
Household head is married or co-habiting	–0.0128	–0.00313	–0.0450**	–0.0918***	–0.0538	–0.150***	–0.120***	–0.163***	0.0971	0.0701***	0.0985***	-0.00460

	(0.0192)	(0.0158)	(0.0180)	(0.0171)	(0.0361)	(0.0258)	(0.0219)	(0.0307)	(0.0618)	(0.0243)	(0.0345)	(0.0268)
Household head is widowed, divorced, or separated	–0.0432**	–0.0618***	–0.131**	–0.146**	0.0280	–0.136**	–0.153**	–0.161**	–0.0225	–0.0299	-0.0357	-0.134**
	(0.0211)	(0.0163)	(0.0173)	(0.0193)	(0.0413)	(0.0202)	(0.0218)	(0.0299)	(0.0611)	(0.0253)	(0.0338)	(0.0306)
Household head completed primary education	0.0899***	0.0642***	0.0684***	0.0534***	0.0578***	0.0429***	0.0789***	0.0335*	0.115**	0.0619***	0.0701***	0.0526***
	(0.0104)	(0.0109)	(0.0101)	(0.0120)	(0.0216)	(0.0148)	(0.0150)	(0.0197)	(0.0146)	(0.0135)	(0.0117)	(0.0149)
Household head completed secondary education or higher	0.201***	0.220***	0.198***	0.173***	0.251***	0.238***	0.258***	0.194***	0.181***	0.188***	0.165***	0.139***
	(0.0120)	(0.0105)	(0.00848)	(0.0125)	(0.0210)	(0.0125)	(0.0134)	(0.0182)	(0.0145)	(0.0143)	(0.0116)	(0.0153)
Household head primarily employed in agriculture	–0.0638***	–0.0204*	–0.0370***	–0.0619***	–0.0635***	–0.0580***	–0.0508***	–0.0582***	–0.0238	0.0270**	-0.00822	-0.0717***
	(0.0123)	(0.0111)	(0.00944)	(0.0103)	(0.0219)	(0.0185)	(0.0154)	(0.0168)	(0.0185)	(0.0115)	(0.0138)	(0.0130)
Business ownership	–0.0413***	–0.00145	–0.00106	–0.00875	–0.0550***	–0.0533***	–0.0537***	–0.0236**	0.0528***	0.101***	0.0836***	0.0579***

	(0.00949)	(0.00994)	(0.00916)	(0.0107)	(0.0132)	(0.0111)	(0.0100)	(0.0119)	(0.0196)	(0.0175)	(0.0168)	(0.0161)
Number of household assets	0.132***	0.130***	0.132***	0.134***	0.128***	0.128***	0.133***	0.137***	0.138***	0.132***	0.130***	0.127***
	(0.00161)	(0.00179)	(0.00152)	(0.00169)	(0.00170)	(0.00177)	(0.00176)	(0.00212)	(0.00253)	(0.00245)	(0.00208)	(0.00247)
Household has electricity	0.132***	0.152***	0.140***	0.130***	0.151***	0.156***	0.119***	0.129***	0.136***	0.130***	0.156***	0.110***
	(0.0117)	(0.0179)	(0.0121)	(0.0141)	(0.0168)	(0.0153)	(0.0128)	(0.0137)	(0.0223)	(0.0248)	(0.0222)	(0.0190)
Rural residence	–0.0291***	–0.000242	0.00927	0.0503***								
	(0.00962)	(0.0120)	(0.00833)	(0.00996)								
Province controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	5.937***	6.176***	6.511***	6.906***	5.973***	6.308***	6.516***	6.932***	5.697***	6.105***	6.395***	6.917***
	(0.0274)	(0.0269)	(0.0220)	(0.0264)	(0.0485)	(0.0355)	(0.0299)	(0.0405)	(0.0682)	(0.0333)	(0.0475)	(0.0386)
Observations	47,598	47,598	47,598	47,598	19,934	19,934	19,934	19,934	27,664	27,664	27,664	27,664

*Notes: standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1; bootstrapping employed using 100 reps.*