Layered crises preventing poverty reduction: an analysis of Zambian poverty dynamics and policy implications

Andrew Shepherd, Virginia Bond, Chiti Bwalya, Richard Bwalya, Antony Chapoto, Lucia da Corta, Vidya Diwakar, Marta Eichsteller, Lwiindi Gwanu, Mary Lubungu, Monde Mwamba, Phillimon Ndubani, Joseph Simbaya, Mitelo Subakanya

Draft, April 2021

Abstract

Zambia is experiencing structural financial distress marked by high levels of severe/food poverty, chronic poverty and impoverishment. Poverty trends are strongly linked to environmental sustainability issues, such as deteriorating fish stocks, soil fertility, drought and floods, and disaster risk. They are also underpinned with further effects such as inability to cope with health shocks, early marriages and divorces, and alcoholism. Long term urban-rural, inter-provincial and gender inequalities are exacerbated by highly contested politics with weak policy development and implementation, both of which sets of contextual factors significantly constrain state action on poverty reduction. The context is also one of macro-economic vulnerability— Zambia is still an LDC, mineral dependent, revenue-deficit and debt-distressed. The 2010s witnessed a recent period of sharp shocks to the incomes of the poor (2016 - 2019) preceded by years of systemic stressors driving a slower decline in income, savings and assets which increased the vulnerability to the recent shocks faced by households and the onset of Covid 19. In this context, policy priorities would include stabilising farm incomes, developing a stronger household asset base, focusing on resource conservation in farming and fisheries, and building a stronger and earlier policy response to disasters.

Introduction[1]

Zambia has a high incidence of poverty especially but not only in rural areas, where nearly 3 out of four households were in poverty in 2015, compared to nearly one out of four in urban areas (LCMS< 2015). Much poverty is under the 'food poverty' line, especially in rural areas and for many women headed households. In 2015 there were almost 3 times as many 'food poor' as moderately poor (Diwakar and Bwalya, 2021). While poverty is most widespread and deepest in rural areas, urban poverty barely declined between 2010 and 2015 (LCMS, 2015), and the qualitative evidence reveals a rise in urban township poverty since 2015, rising sharply between 2017 and 2020 as a consequence of coinciding macro shocks on employment corresponding with rising costs of living (Bond et al., 2021). For the Zambian population as a whole the numbers and proportion of the extremely poor *increased* from 54.2% in 2010 to 60.8% in 2015 (LCMS, 2015).

The country's macro-economic context is a challenging one for poverty reduction. Between 2000 and 2014, the annual real gross domestic product (GDP) growth rate averaged 6.8%, but then slowed to 3.1% per annum between 2015 and 2019, mainly because of falling copper prices, declines in agricultural output and hydro-electric power generation due to insufficient rains (XX). During the previous decade the government has invested heavily in badly needed infrastructure, but this has left it unsustainably indebted, and in 2020 in default. Debt servicing and public sector salaries leaves little over for development expenditures. Kwacha devaluation against the dollar has led to inflation, notably in food prices (XX), which are of considerable significance for Zambia's poor, most of whom are net purchasers of food. Drought in 2016 and 2019 led not only to very significant food insecurity but also electricity load shedding which had a highly negative impact on small and medium businesses and employment. With Covid economic activity was in recession in 2020 with double digit

[1] Where not stated the sources for this chapter are several reports published as part of the Zambia poverty dynamics research, about to be uploaded here.

inflation, and per capita growth was projected to be negative through 2022 (World Bank, 2020). 2020 has seen the country default, opting to bow out of a $42.5 million Eurobond repayment in November; together with the severe effects of the Covid pandemic on top of the 2019 crises.

Due to its debt situation, Zambia has made social cash transfer beneficiaries a one off phone payment of K2400 (US$ 107) but has not had the resources to develop a broader or more substantial response to distress. Nevertheless, some recipients reported investing the payment into a micro-business (CPAN, 2021). Covid has thus been an important shock in its own right *and* layered on pre-existing, multiple crises, no doubt exacerbating existing inequalities (gender, urban-rural, income). This paper discusses these challenges, focused on the intersection of issues relating to environmental sustainability, disaster risk, macro-economic vulnerability, and linked socio-economic issues, which together combine to severely constrain poverty reduction prior to and during Covid19.

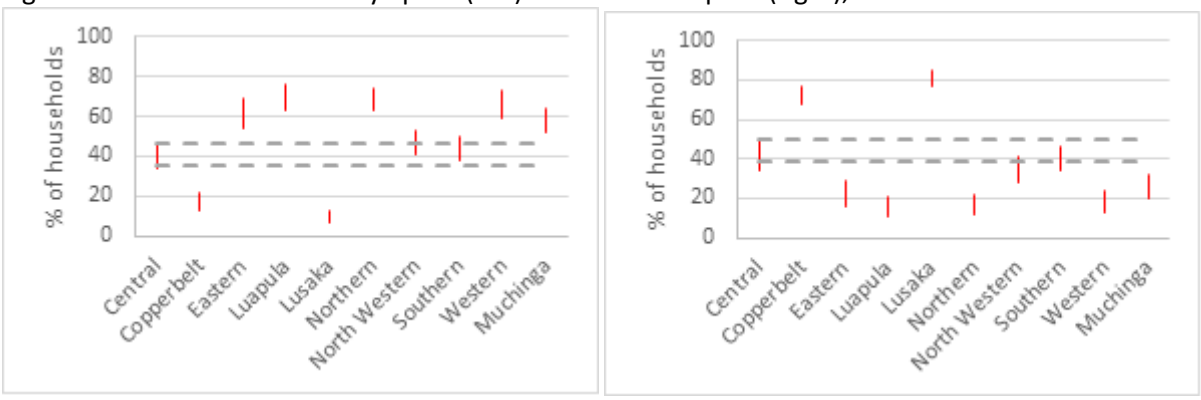
This study synthesizes mixed methods research evidence on poverty, its dynamics, and its drivers in Zambia. Th individual studies relied on data from the national Living Standards Measurement Surveys (LCMS) 2010 and 2015, the Rural Agricultural Livelihoods Survey (RALS) 2012, 2015, 2019 pre-Covid qualitative data collected during 2019-2020 across 9 provinces and sites, 5 rural and 4 urban, (160 life history interviews and related focus group discussions and key informant interviews). During Covid a small sub-sample of those households were re-interviewed.

Overview of poverty dynamics in Zambia

Poverty dynamics refers to the dynamic movements around a poverty line, in this case the national poverty line or an income approximation. People are identified as chronically poor if they are poor for a number of years (the intervals depending on the timing of surveys); impoverished if they become poor having been non-poor; escaping poverty if they cross the poverty line in an upwards trajectory; and a sustained escape from poverty would be where a household starts poor, then crosses the poverty line, and at a third point in time remains out of poverty.

What do we know about poverty dynamics during the 2010s? Between 2010 and 2015 a 'synthetic panel'[5] revealed that static profiles were most common, with estimates of chronic poverty and never-poor status each accounting for between one third and one half the population when using national poverty lines. Most chronically poor households are found predominantly in rural areas, and most never-poor households are located in urban areas. In between these extremes are still considerable shares of poverty mobility, up to 27% of the population (Diwakar and Bwalya, 2021). It appears that most of the impoverishment during the 2010-15 period occurred in rural areas. We expect that during 2015-2020 there will also have been impoverishment in urban areas, due to load shedding and the Covid pandemic significantly affecting businesses and employment.

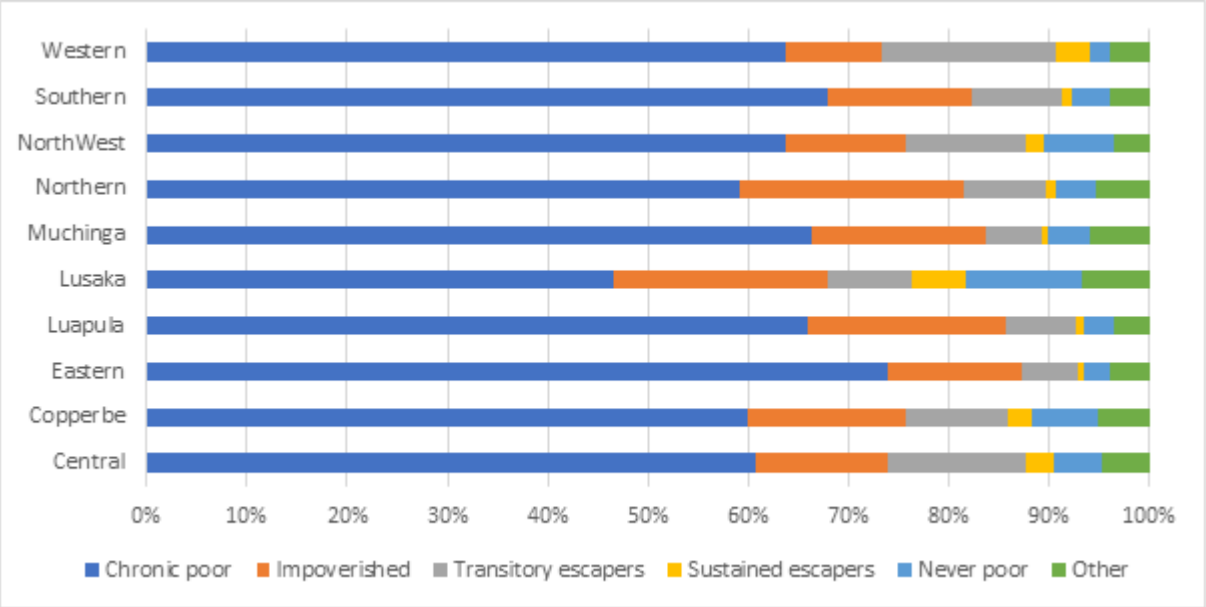
Figure 1: Estimates of the always-poor (left) and the never-poor (right), 2010-2015



Source: Diwakar and Bwalya (2021)

There was also a high level of inter-provincial variety in rural poverty dynamics patterns, when examining data on smallholder farmers from the Rural Agricultural Livelihoods panel Survey (RALS) spanning 2012 – 2015 – 2019.[2] The three urbanised/mining provinces (Lusaka, the Copperbelt, and North-Western) had the highest share of never-poor households, and amongst these the Copperbelt and Lusaka also had the most sustained escapers, alongside Central Province (Figure 2). This likely reflects the higher share of urbanisation in these provinces spurred by growth along the railway line from Livingstone to the Copperbelt, where poverty rates are by and large lower than in rural areas of the country. It is possible that the presence of mining has also spurred diversification into off-farm activities as an avenue out of poverty. Reflecting this narrative, and linked to its capital status, only Lusaka Province had fewer than 50% of households that were chronically poor (Diwakar et al., 2021).

Figure 2: Percentage of rural households in the different poverty categories by province



Source: Diwakar et al. (2021)

Though the urbanised/mining provinces more generally had a greater share of households that were never-poor, they also had large shares of transitory escapers, along with Southern, Central, and Western Provinces. We know that there is a high level of chronic poverty in rural Zambia, and a very low level of sustained escapes, regardless of the poverty line selected (see below). The majority of rural agricultural households (65%) have been living in chronic poverty, with some significant geographic variations. Rates of chronic poverty were highest in the Eastern Province, with almost three in four households living in chronic poverty, compared to 47% of households in Lusaka province (Diwakar et al., 2021).

Widespread chronic poverty: interlocking multiple stressors

As we have seen, chronic poverty remained widespread in rural areas, and significant in urban areas, with further downward mobility and heightened risks of destitution as a result of Covid in 2020-2021. Constraints include livelihoods affecting be declining or highly variable natural resource bases, combined with others including uncompetitive maize marketing, and the dominance of the maize

[2] Due to data limitations, the income variable does not include various aspects of agricultural inputs or labour costs, imputation of non-cash expenditures, and other income. The metric is best regarded as a cash inflow variable (referred to hereafter as income for convenience). It is compared to the $1.25 poverty line, as middle ground between the low national poverty line and $1.90 international poverty line (see Diwakar et al., 2021).

crop in Zambian farming generally; dependence on farming with no or little education and/or high dependency ratios; women and youth headed households being unable to access enough land and irrigation for an agriculturally based escape. This combination of constraints meant that diversification and capital accumulation routes out of poverty were challenging.

There are rural occupations which are likely to provide livelihoods below the poverty line. In rural areas, these include piece wage labour (ganyu); charcoal burning and firewood or reed collection; much fishing and farming, some beer brewing and selling. These occupations frequently face declining or highly variable natural resource bases: declining soil fertility and increasingly variable rainfall; diminishing farm sizes; soil depletion; declining fish stocks, river and lake levels, and flooding ; deforestation – among the qualitative research sites only in Northwest Province could a somewhat viable return be made from producing charcoal or collecting firewood. In addition, inherited farm holdings have shrunk, and access to fertilisers to mitigate declining soil fertility has not been easy, nor are they a sole or long-term solution to the problem.

Soil fertility is a frequently cited factor that contributed to poor crop harvests. Soil depletion was a complaint among chronically poor households in all qualitative research sites except one where there was a dambo (Eastern Province).[3] Traditional methods of cutting down trees to prepare land and provide ash as fertiliser were still the main farming practice where there were trees. There was evidence of using some intercropping and growing beans, which were both nutritious and fixed nitrogen. However, conservation farming methods were not very evident, despite their promotion in Zambia over several decades, and there was a lack of knowledge and discussion on both intercropping and soil management. Farai[7] describes how poor soils, lack of fertiliser and poor rainfall undermine her farming endeavours and vision:

> *For the 2019/2020 farming season, Farai has planted maize at her farm and is expecting to harvest 6 bags of maize. "I have been cultivating a bigger portion of land over the years but the yield remains quite poor due to soil infertility", she complained. She believes that access to fertiliser will greatly help the yields as the soil fertility at her farm has deteriorated over the years resulting in her farm of about four Lima[8]. She mentioned that it is slowly becoming very hard to predict rain as their livelihoods are dependent on farming. She believes with the right amount of rain and fertiliser; she can raise her crop harvest from 6 bags to 60.*

Fishing as a way of life is more common in Luapula, Northern and Western provinces due to abundancy of water resources. 3 out of 5 rural research sites had fishing as a major livelihood and one which in the past had provided a good living.[10] Fish stocks in the two lake sites were low, and government attempted to manage this by banning fishing for at least 4 months of the year, though the Northern Province site lake had international borders which made the fishing ban difficult to impose. The riverain site had seen the river dried up after several years of drought. Depleted fish stocks were widely attributed to growth in the fishing population and poor fishing techniques. Government was encouraging fisherfolk to turn to farming or livestock keeping as alternative livelihoods. Aggressive fish traders, sometimes not local to the area, are also reported to be a feature of the fishing communities in Luapula and Northern Provinces. While assets are important in fishing, few chronically poor households own their own boats or many nets, and often work for others to catch fish and/or rent a boat. Owning your own net or other fishing asset allowed fishermen to earn more, as Porsha[12] describes. *Her father gave her husband additional fishing nets to improve his fishing. This improved the husband's ability to catch fish such that he even started to hire more people to help him with the fishing.*

[3] Dambos are not always reliable however: in Western province, in times of drought, locals also farmed in dambos and by the river banks for survival. In 2018, floods submerged crops thus severely crippling agriculture in the area.

The declining natural resource base of small-scale farming and fishing is a serious and long-term issue in rural Zambia. Combined with patchy and incomplete conservation efforts - soil conservation programmes, fishing bans and net size regulations, partial adoption of conservation farming (Umar et al, 2011),[4] the paucity of assets among the chronically poor, and a growing frequency of droughts, which undermine farming, fishing and livestock livelihoods: this nexus is a key policy issue now and for the future.

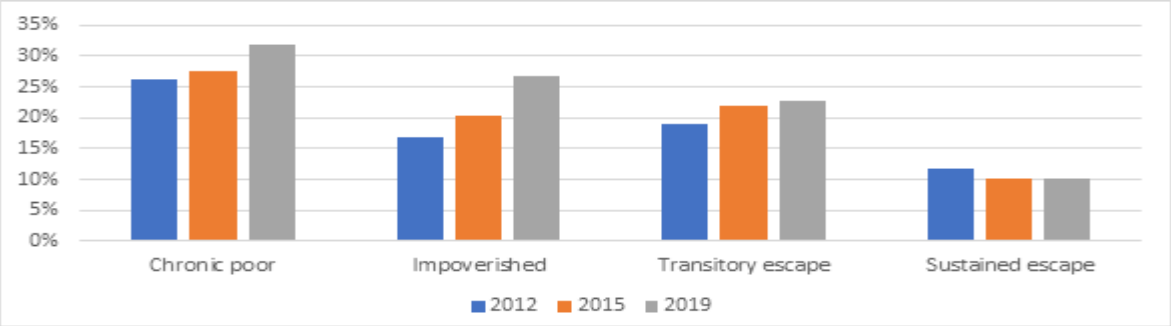
Strong gender-based divisions of labour persist, in farming, fishing, domestic work, and the division of responsibilities. However, with the pressure on employment of recent decades, there is a noticeable shift towards more women entering the labour market and generating a growing portion of income, especially in urban settings. This gives women increasing independence, but can also result in a power dynamic where some husbands preventing wives from entering the labour market.

Women headed households comprise around a quarter of all households[20] and a high proportion of the chronic poor (Figure 3) – driven by the absence of a male earner; the tendency of male migrants not to support children especially if they have a new family, and a married woman's vulnerability to her husband's death, divorce, or migration. The 2018 DHS recorded over half of divorced or separated women had experienced physical violence and nearly a quarter sexual violence (p313). In the qualitative research, children of divorced parents usually accompany their mother, and frequently lose access to food as well as education. Most women are aware of their rights and engage in legal action, but after the ruling, have no power to enforce compliance. As a result, divorced women were more vulnerable to downward mobility and to dependence on relatives and their children. Boron (TE_W_rural) narrated how her older brother had to support her mother after she divorced her husband:

> "*My mother and father were still married. My brother advised that we travel to K, see dad and serve him with the divorce notice. After everything was settled, my brother bought mum a plot in K and built us a three roomed mud house. Life was good, my brother used to send us money, food, seed and fertilizer because we used to farm for eating and selling.*"

A few CP and TE reflected how divorced women resorted to transactional sex and prostitution as a source of income. Candy (TE_W_rural), a mother of nine, narrated how when she was young was forced into prostitution in order for her to provide for children. "*After divorce from my first husband, I became a transactional sex worker to provide for my children. It was during this time that I had other children so that their fathers would support us".*

Figure 3. Share of women headship by year and poverty trajectory



Source: Diwakar et al. (2021)

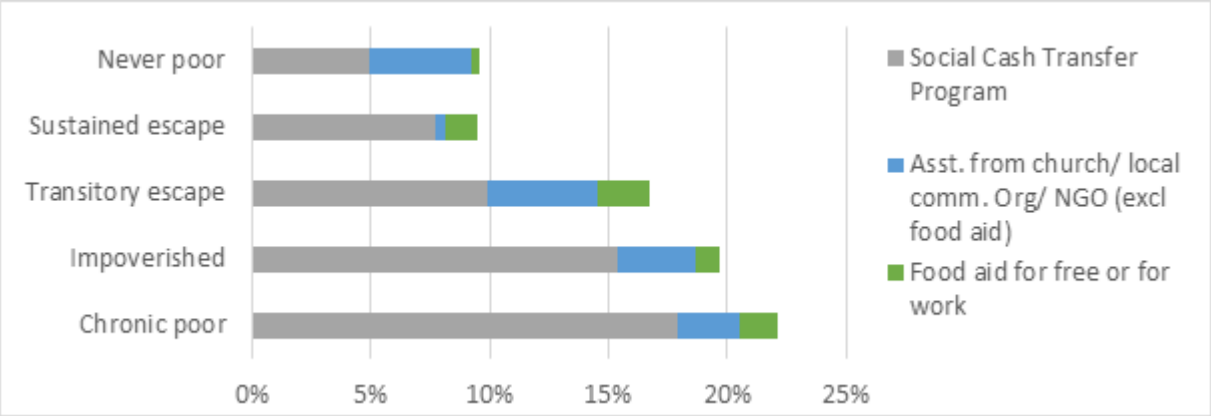
[4] Umar, B. B., Aune, J. B., Johnsen, F. H., and Lungu, O. I. (2011). Options for improving smallholder conservation agriculture in Zambia. J. Agri. Sci. 3(3), 50e62. doi:10.5539/jas.v3n3p50.

In the life histories there is limited evidence of SCT being allocated to divorced women. Modesty (TE_W_Simu) was one of the few exceptions:

> *She said she was lucky to benefit from social welfare. She got K180 in December 2018, April 2019 and another K180 in early December 2019. This money, once it comes, goes a long way in meeting various households needs especially payment of school fees. She got enrolled by the department of social welfare because of divorce. She used the court documents to be considered for financial support.*

More generally, we know that social cash transfers can make a significant difference to the consumption and economic activities of the poorest (Handa et al, 2018) but have been intermittent, unpredictable, and have left many chronically poor people out (Figure 4). This includes older people who are often chronically poor.

Figure 4: Receipt of assistance by poverty trajectory, 2019



Source: Diwakar et al. (2021)

Provincial variation in chronic poverty has been marked. The results from Figure 6 suggest that Luapula, Northern, and Western provinces are most vulnerable to chronic poverty. These are also the three provinces with the highest depth of poverty in both 2010 and 2015. Rates of chronic poverty also higher in Eastern and Muchinga provinces relative to the country-wide average. Figure 6 also shows that only Central, North Western, and Southern provinces generally fall within the country-wide range of people living in chronic poverty or never poor. This then illustrates the extent to which national averages can be misleading or fail to capture the variety of subnational differences especially for people in chronic poverty or the never poor who face relatively static poverty trajectories over time (Diwakar and Bwalya, 2021). This analysis suggests that, while policies to prevent impoverishment and promote escapes can be relatively uniform across the country, there may need to be significant variation in the emphasis and policies to tackle chronic poverty from province to province.

Narrowing escape routes

The overwhelming story in Zambia during the 2010s is that there are few escapes from poverty, that temporary escapes are often not converted into sustained escapes, and as a result sustained escapes can be hard to find. Combining the quantitative and qualitative evidence together, we can see two broad socio-economic pathways, often supported by improved savings, asset development and collaborative spousal relationships characterise sustained escapes from poverty.

Firstly, a combination of education (completed primary in rural areas, or lower secondary in urban areas), access to electricity, and on and off-farm diversification was a common pattern underlying sustained escapes. Completing lower secondary education (at least) is associated with resilience – being able to resist falling back into poverty, and was especially important in towns and cities. Access

to electricity enabled diversification as well as children's education. The rollout is slow in rural Zambia (4% have access, compared to 67% in urban areas); many could benefit from faster electrification, especially off grid. Diversification is often central to a sustained escape – within farming especially away from maize, which has been a major source of reduced rural incomes (Diwakar et al, 2021), and is a major limitation on diet diversity (Mwanamwenge and Cook, 2019), towards other crops and livestock, and away from farming to nonfarm jobs and businesses, most commonly in retail. Crop diversification has been found to increase farm income, and food security, and is promoted by extension, irrigation, asset endowments, and market access (Mofya-Mukuka & Hichaambwa, 2018).

Commonly different members of a household pursue different economic activities. Diversification into the rural nonfarm economy is often a source of protection against poverty. Being close to roads and markets by comparison increases the probability of a sustained escape, as these infrastructures help reduce some sources of risk. However, women or young adult headed households face constraints in diversification, as do severely poor households.

Secondly, in smallholder farming an increase in own cultivated land (which could be purchased, inherited or access through a traditional authority) was not only associated with an increased probability of a sustained escape from poverty, but was also typically accompanied by increased use of irrigation – whether own cultivated, rented in, borrowed in or a garden. Rates of irrigation increased between the first and last wave of the RALS panel for all trajectories, highest in 2019 for sustained escapers, followed by the never-poor. The most common use of irrigation was irrigated gardens (Diwakar et al, 2021). Livestock ownership was also important, and the only significant correlate of a sustained escape from the lowest ($0.70) poverty line, indicating how important livestock can be to the poorest people.

From the qualitative research we can observe key moments in these sustained escape trajectories included, firstly in young adulthood: most sustained escapers had not got further than primary education, with few exceptions (mainly women). However, they had a strong focus on their own children's education, which was beneficial to the sustained escape, for example, an educated daughter helping with purchasing goods to trade. The value of a young couple pulling together was very evident. Relatedly, women's routes out of poverty are largely through collaborative spousal relations in livelihoods during marriage and petty trade/trading. However, these are constrained by widespread teenage pregnancy and early marriage frequently followed by divorce, and caring responsibilities where there are high dependency ratios, especially in rural areas.

Compared to other countries where CPAN has worked, savings institutions are becoming more widespread but not omni-present in Zambia, as reflected in its recent 2020 FinScope survey (showing that while financial inclusion through mobile money has increased significantly, especially in towns and cities, still a third of the population is financially excluded, another third still dependent on informal institutions, and more so in rural areas. Asset accumulation often through savings is a critical aspect of escaping poverty; but in Zambia poor and impoverished people have been struggling to hold onto assets as downward pressures have bitten hard especially during the 2015-20 period. The accumulation of assets was common amongst sustained escapers through savings (from profits from goods or produce sold) and/or through social capital - inheritance or gifting capital or land from kin, sometimes combined with allowances and connections with people in political positions or provision of farming inputs or skills. Commonly livelihood diversification would follow by combining livelihoods: either fishing + farming + trading/bartering + money lending or formal employment + trading. Assets included houses, land (farm and/or urban land to develop), shops, vehicles, livestock, boats & fishing nets.

What was noticeable for both young adult and middle aged sustained escapers was the capacity to withstand hard times reflected by family strife, alcohol abuse, poor health, loss of assets (e.g. in one case a council destroyed a market stall). Despite these difficulties, gradual improvement in well-being over time manifested in more food, assets, education of children, better housing, and a widening asset base. In recent years they have been able to buffer the tougher economy and take advantage of gaps in the market. In rural areas retaining physical strength was especially important; failure to do so could be a source of impoverishment, for example in older age.

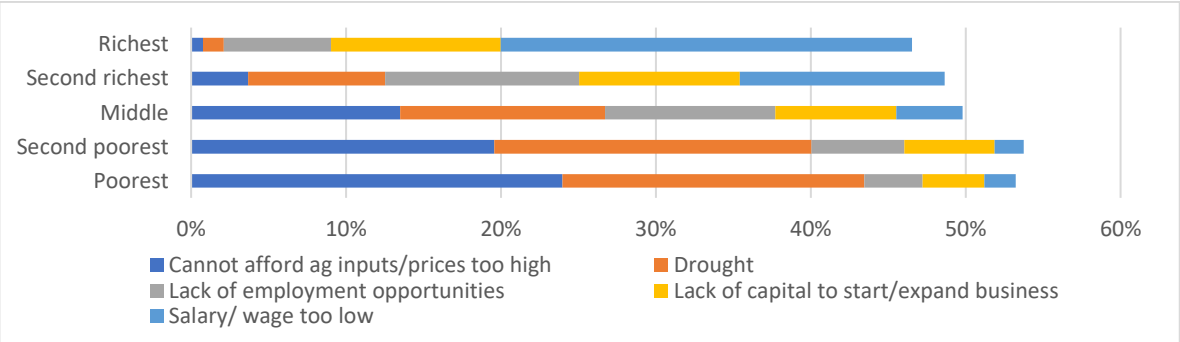
It is very clear that sustaining escapes from poverty diversification and asset accumulation has been supported by social capital, health and education services. This has been easier in urban areas where physical infrastructure and services have been more available. Social capital to see children through education and deal with out of pocket health expenditures has often made the difference between escaping poverty and remaining poor in many cases. However, sometimes meeting these expenditures can be at the expense of food consumption, savings and investment in businesses.

Growing downward pressures 2015-19

The downward pressures of the last five years have been extreme. Not only has economic growth slowed, inflation also spiked in the drought periods of 2015-6 and again during 2019 and even more during Covid. In rural areas a decline in the mean total income between 2012 and 2019, particularly pronounced for 2019, when there was a big decline in income from maize sales in particular. Even the poorest people saw their incomes decline over this period (Diwakar et al, 2021). The qualitative data also records this last period as devastatingly bad, framed by a depression in 2016 caused by load shedding, drought, devolution and impacts on availability of credit, a drought which generated near-famine conditions in largely opposition held the south and west of the country, and a looming debt crisis limiting public expenditure on services. The 2016 and 2019 drought had a devastating impact on farm incomes and informal sector incomes, especially those dependent on electricity supplies. Political competition also led to widespread 'gassing' incidents amid an increasingly unforgiving political environment. Moreover, declining and unpredictable rainfall, limited access to markets coupled with high food prices, chronic food insecurity, and poor healthcare are some of structural constraints preventing rural Zambians from escaping poverty (UNDP, 2015).

Economic drivers of descent into poverty in rural and urban areas in the qualitative data include high inflation, limited economic and livelihood options, not being well-endowed with assets, practicing low return and subsistent income generating activities, closure of industries, and limited access start-up capital for business. Some of these are reflected in the quantitative data, where respondents report the top five reasons they perceive their households to be 'worse off' in 2015 compared to a year earlier (Figure 5). In the qualitative data, rural areas are particularly affected by late delivery of farm inputs, price controls for farm produce and exploitative 'briefcase' buyers for farm produce. Social drivers of descent include; little or no education, poor health, larger households and limited social and physical infrastructure. Gender related drivers of poverty descent in urban and rural areas mainly involve unfair division of labour and limited implementation of laws relating to gender. Gender factors specific to rural areas include, teenage pregnancies, teen marriages, and school dropouts due to long distances to school, financial constraints and social cost. A WFP report noted that women headed households lost assets while male headed households accumulated them on average during 2016-17, immediate post-drought years. Environmental factors include changing rainfall patterns which affects planning for farmers; poor rainfall which affects farm yields and power production; and severe droughts, magnified by global warming.

Figure 5: Subjective top five reasons households are 'worse off' in 2015 vs 2014



Source: Diwakar and Bwalya (2021)

Covid19 has brought significant loss of income, resilience and food security. Zambia's partial lockdown from March 2020 led to loss of employment for some, with little subsequent rehiring; loss of business income for many, following a big slump in demand; significantly increased cost of basic needs including food, partly because of devaluation of the Kwacha, partly because of continued high maize prices following the 2019 drought, and the increased cost of farm inputs; and there was also a decline or non-receipt of remittances, of special significance to some of the poorest people. Many failed to save, and increased borrowing to survive (CPAN, 2021). High frequency phone surveys in June and November/December 2020 recorded similar findings.[3] After the second survey round 59% reported income losses, more than 40% of adults reported reducing meal portion sizes or the number of meals, one out of five respondents said they had no way of getting emergency assistance, and two out of five said it would be very difficult, indicating a dearth of social capital and social cohesion (IPA, 2021), supported by CPAN's qualitative research. Women experienced much steeper job losses and reduction in earning than men. Although a few respondents reported increased earnings, livelihoods and wellbeing had clearly not returned to pre-Covid levels (IPA). And it should be noted that a phone survey in Zambia would not cover much of the poorest – those without phones, or electricity to charge them.

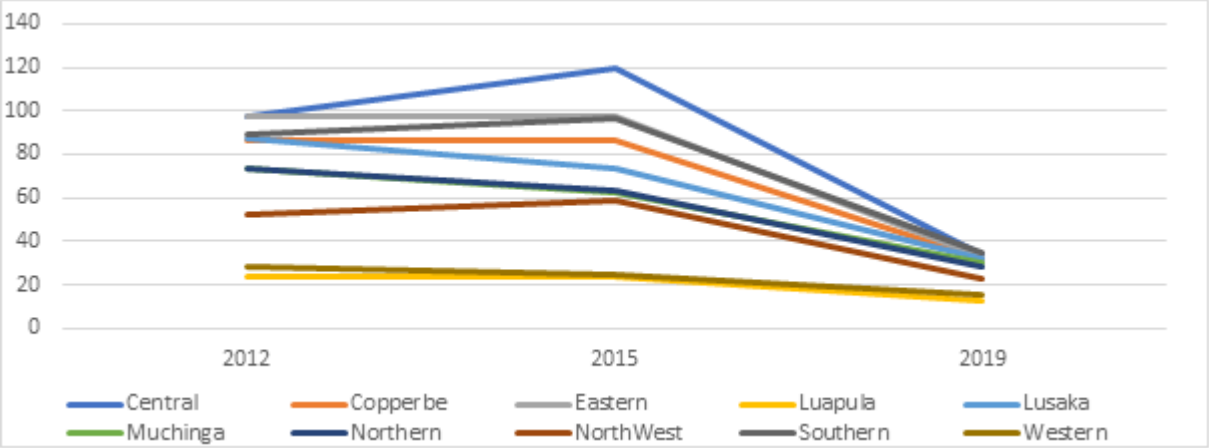
Asset sales during Covid19 also increased from 25% to 35% reporting it in the two rounds of the IPA survey; over half of respondents depleted savings, two out of five households borrowed even though they might not be able to repay and almost one fifth stopped loan payments (IPA, 2021). CPAN's qualitative research noted widespread disposal of household assets as a result of downward pressures and shocks even before Covid struck, such as due to illness and death. Impoverished and transitory escaper households reduced their land holdings between 2015 and 2019, although in the RALS survey both categories surprisingly recorded an increase in overall asset values.
Some enterprises, like beer brewing/selling were liable to asset confiscation. On top of the de-asseting which has already taken place, the Covid-related asset sales can be expected to bring many households into chronic poverty.

Among environmental shocks, the drought leading to near famine conditions in 2019/20, followed on from droughts in 2018 and 2015, on top of shrinking farmland holdings. The RALS survey records a massive drop in maize income (Figure 6), and with Zambia's maize occupying three fifths of farmland, most of it in the small scale sector, this is a very sensitive indicator of income. Adding to these rural pressures are the reduced availability of land, the deterioration of land quality especially soil fertility and corresponding rising fertiliser needs, but also rising fertiliser prices and chronic delays availability of subsidised fertiliser. All of this sharpened by increasingly frequent droughts, and in some cases flooding.

> *The 1992 drought was a huge blow to the maize farming as no single cob of maize was harvested. The insurance company however covered the cost of the loan from Lima Bank and that was the end of Diana and her husband's access to the loan service. The lack of access to*

credit sustained the down fall of their farming career and they resorted to selling out of most of their assets as a means of survival. They also depended on government and Oxfam for handouts.(INT102, Diana, SE)

Figure 6: Per capita income from maize production by province over time



Source: Diwakar et al. (2021)

Demographically, households with large number of younger and older persons are vulnerable to poverty descents (Diwakar et al, 2021), at least in part reflecting the smaller amount of per capita assets or land size typically in larger households. Zambia's population growth will put even more pressure on the demand for jobs, health care and other social services (World Bank 2020). The rising costs of housing, education, farm inputs and other services have also made escaping poverty increasingly challenging and contributed to impoverishment.

Health shocks too can lead to the sale of assets, and reduced food consumption to pay medical bills. Deaths are strongly present in life history accounts, with significant negative effects. Alcohol abuse was also common, often bound up in the often impoverishing processes of separation and divorce, along with infidelity and gender based violence (Bond et al., 2021). Our data provides examples of households where different forms of illness has led to poverty descent. Households which were once non poor have been made chronically poor due to illnesses and deaths.

> *"After my husband died, we started struggling with fertilizer and now we do not farm that much and this affects our eating, we do not eat well because we cannot farm enough food. We were eating three meals a day before my husband died but now we only have 1 to 2 meals a day, it is a constant struggle. The death of my spouse was the biggest shock in my life, my livelihood changed very much and now we struggle with everything. I have nofinancial assistance now. Even thatching the house I need to pay someone, but I have nothing to pay them. Now we live as if there is no person and yet there is a person…"* (INT 105, Clementina, CP)

Conclusion and policy priorities

Zambia's combination of persistent high and deep poverty levels, an unsustainable debt burden, environmental decline and climate volatility, and the effects of highly contested politics on policy development and implementation, mean that its poverty will persist into the future unless there is significant action on several fronts and some political change. Projections through to 2060 show Zambia as still having very large numbers of people in business as usual scenarios; even the best case with pro-poor policies and investments shows poverty reducing gradually, but only after 2030 (XX).

The political economy analysis shows a pattern of budget allocations which historically favour the urban and formal sector segment of Zambian society, with women, urban poor and rural areas left

(far) behind. The political system is one of enduring presidential executive power and the a politization of the bureaucracy, in which loyalty to the ruling party is key (XX). This has undermined the possibility of downward accountability to citizens which could otherwise be expected to drive poverty reduction in a competitive political system. Assuming this political system remains in place, progress will then depend on the initiatives individual presidents and their ruling parties can make.

It is to be hoped that the combination of near famine conditions in 2019, unsustainable debt and the continuing Covid pandemic may be enough to create conditions for a turning point in policy making. Zambia is a middle income country since 2011, but it remains a Least Developed Country, because it is economically vulnerable and has a 'human asset' deficit (especially in maternal mortality and undernourishment).

A key issue which policy needs to respond to is a nexus of rural economic, environmental and disaster risk management constraints on smallholder farm and rural income, part of which also affects the urban informal sector. Indeed, the main dimensions of this crisis are the (i) volatility of farm income, which was hugely reduced during the year of our study, 2019, but had previously been significantly reduced in 2016, in both cases as a result of drought having an impact on farm production; (ii) a process of de-asseting over the decade, where, as a result of repeated shocks and stresses households have sold or otherwise lost and not been able to replace assets; and (iii) a long term failure to develop adequate alternative sources of soil fertility and soil moisture as bush fallowing systems have run out of fallow land; and (iv) inadequate disaster risk responses.

Volatility of income growth is a major inhibitor of reducing poverty at national level (Shepherd et al, 2017), and here at micro-level too. Farm households with diversified farms and some nonfarm economic activity have done significantly better than those highly dependent on maize, Zambia's main crop. Policy remains heavily focused on maize and supporting soil fertility with subsidised fertilisers. Some diversification into beans and groundnuts has been promoted recently by the Farmer Input Support Programme (FISP) but the emphasis remains strongly on maize. Fisherfolk facing declining lake and river fish stocks have been advised to diversify into farming, but also livestock. Such policy trends need to be strengthened, and the focus on maize reduced in favour of other crops, livestock, and nonfarm economic activities. The FISP accounted for 5% of government expenditure in 2020 (XX), so there is major potential to reform this aspect of policy.

The second dimension relates to the scarcity of assets among poor households. If a household had a source of manure with which to fertilise its farmland it would need access to means of transport to get the manure to farm fields which might be some distance away. Carts and oxen are rare, but access to them would be an important asset for such farm households. The equipment to irrigate plots of land could also reduce the effects of climate volatility. Strengthening the policy focus on livestock would be especially beneficial: the majority of chronically poor rural Zambians have very few livestock other than a few chickens, and it is a potential source of manure (which would help to address the soil fertility crisis), milk, cash income, and a savings medium in a situation where the latter are scarce. Zambia could learn from Rwanda's Garinka programme, which distributes cows and smaller stock to poor households who can manage them, and this has consistently proved an escape route from poverty (Shepherd et al, 2020). Re-asseting poor households will be a major aspect of future poverty reduction in Zambia. Poor women headed households should be a particular focus, since they tend to have lost access to assets. Asseting programmes could be built on the foundation of a social cash transfer scheme, if that foundation could be made more reliable and predictable than it has been. Social cash transfers also need to be able to adapt to changing circumstances to assist in warding off disaster. While there was a one off phone payment to SCT recipients during Covid this was barely enough to mitigate the effects of the pandemic.

The third and related dimension is the inadequacy of public and private investment in resource conservation. Land remains a major asset, as are fisheries for poor rural Zambians. Over the decades

a number of NGOs have promoted 'conservation agriculture', which advocates minimum soil disturbance, permanent soil coverage by living or dead biomass, and diversification of crop rotations, but adoption has been partial, due to the labour intensity required, lack of mechanisation services for smallholder farmers, market access issues and a variety of context specific social and cultural issues (Zulu-Mbata et al, 2016).

There is a need to move from conservation agriculture to conservation practices which can work given farm household circumstances and constraints (Rodenberg et al, 2020), and for the state to give much stronger support to soil and water conservation. Zambia could learn from the successes and failures in other countries such as Ethiopia (Dalka, 2018) where adaptation of soil and water conservation design to local context was found to be the major issue; likewise a systematic review found that there were no universal factors governing adoption of SWC in smallholder farming (Wauters and Mathijs, 2014).[5] In identifying suitable approaches in Zambia this systematic mapping could be a useful starting point.

The fourth dimension is the extent that disaster risk management processes succeed in providing relief when it is needed. Despite a well worked out legal basis and policy revised in 2015, an institutional system, and an operational plan developed in 2019, the government's Disaster Management and Mitigation Unit led a slow response from government to the 2019 drought. While this may have been for political reasons, the country needs a system which is capable of overriding political reluctance in specific cases to ensure that natural hazards do not become disasters leading to long term impoverishment.

While the debt crisis has meant that the public expenditure to underpin such policies and programmes is currently under extreme pressure, some of this pressure could be released if subsidies on fertiliser were reduced, and with rising copper prices there may be scope in the medium term to undertake the investments mentioned above, as well as rebuild poor people's access to education and health which will inevitably be priorities.

[5] Wauters, E. and Mathijs, E. (2014) 'The adoption of farm level soil conservation practices in developed countries: a meta-analytic review', Int. J. Agricultural Resources, Governance and Ecology, Vol. 10, No. 1, 2014