Republic of Zambia

GEWEL

Zambia Girls' Education and Women's Empowerment and Livelihoods Project

Towards a More Adaptive
Social Protection System in Zambia

WORLD BANK GROUP

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Contents

Acronyms and Abbreviations

7NDP	Seventh National Development Plan
8NDP	Eighth National Development Plan
ALI	Alternative Livelihood Initiative
ARC	African Risk Capacity
ARV	Africa RiskView
ASP	Adaptive Social Protection
COVID-19	Coronavirus Disease 2019
CSA-IP	Climate Smart Agriculture Investments Plan
CSO	Civil Society Organization
DMMU	Disaster Management and Mitigation Unit
DRM	Disaster Risk Management
ECT	Emergency Cash Transfers
EWS	Early Warning Systems
FAO	Food and Agriculture Organization of the UN
FCDO	Foreign Commonwealth Development Organization (UK)
FSC	Food Security Cluster
G2P	Government to Person (payment system)
GBV	Gender-Based Violence
GDP	Gross Domestic Product
GEWEL	Girls' Education and Women's Empowerment and Livelihood Project
GII	Global Inequality Index
GIS	Geographic Information Systems
GLoFAS	Global Flood Awareness System
GRM	Grievance Redress Mechanism
GRZ	Government of the Republic of Zambia
HCI	Human Capital Index
HDI	Human Development Index
HGSM	Home-Grown School Meals Program
IFBSPP	Integrated Framework of Basic Social Protection Programs
INFF	Integrated National Financing Framework
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
ILO	International Labor Organisation
KFW	Kreditanstalt für Wiederaufbau
KGS	Keeping Girls in School
LCMS	Living Conditions Monitoring Survey
MCDSS	Ministry of Community Development and Social Services
MDTF	Multi-Donor Trust Fund

MIS	Management Information System(s)
MNO	Mobile Network Operators
MoA	Ministry of Agriculture
MoFNP	Ministry of Finance and National Planning
MoH	Ministry of Health
N/A	Not Available
NDVI	Normalized Difference Vegetation Index
NEET	Not Engaged in Education, Employment or Training (Youth)
NRC	National Registration Card
NSPP	National Social Protection Policy
OVC	Orphans and Vulnerable Children Bursaries and Scholarships program
PMT	Proxy Means Testing
PTI	Project Targeting Index
PWAS	Public Welfare Assistance Scheme
SBCC	Social and Behavior Change Communication
SCT	Social Cash Transfer Programme
SIDA	Swedish International Development Cooperation Agency
SDC	Swiss Agency for Development and Cooperation
SDG	Sustainable Development Goal(s)
SOP	Standard Operating Procedures
SPJ	Social Protection and Jobs
SSRSP	Scaling-up Shock-Responsive Social Protection
STT	Stress Test Tool
SWL	Supporting Women's Livelihoods
ToC	Theory of Change
UN	United Nations
UNICEF	United Nations Children's Fund
UNJPSP-II	United Nations Joint Programme on Social Protection
UNSDCF	United Nations Sustainable Development Cooperation Framework
UNSDPF	United Nations Sustainable Development Partnership Framework
USD	US Dollars
WFP	World Food Programme
ZISPIS	Zambia Integrated Social Protection Information System
ZMD	Zambian Meteorological Department
ZVAC	Zambian Vulnerability Assessment Committee

Acknowledgements

Executive Summary

This report was developed within the framework of the **World Bank-financed Scaling-up Shock-Responsive Social Protection (SSRSP)** project, which complements the World-Bank financed **Zambia's Girls' Education and Women's Empowerment and Livelihood (GEWEL)** project. The SSRSP project aims at stabilizing financing for the social protection sector, thus paving the way for the **integration of a shock-responsive element into the Social Cash Transfer (SCT) Programme** implemented by the Government of the Republic of Zambia (GRZ). To that end, diagnostic work related to the adaptiveness of the social protection system in Zambia was undertaken to inform the landscape of shock response through social protection in the country following the Stress Tool designed and rolled out by the World Bank as part of the Adaptive Social Protection framework. In particular, the process consisted of:

1. Quantifying how many Zambians are vulnerable to the negative impacts of covariate shocks (first part of the tool).

2. Shedding light on both the strengths and weaknesses of social protection systems from an adaptability perspective (second part of the tool).

3. Developing a Scalability Framework to set the parameters of the scale-up of the SCT program in times of shock, hence paving the way for the development of Standard Operating Procedures (SOPs).

Building on the detailed analysis of the Stress Test exercise carried out for Zambia in July 2022, the main objectives of this report are to:

1. **Contribute to a better understanding of vulnerability** through a quantitative analysis carried out at national level.

2. **Highlight the areas for investment that are required to advance the Adaptive Social Protection (ASP) agenda**, as well as **informing the development of SOPs for the SCT program**, administered by GRZ through the Ministry of Community Development and Social Services (MCDSS).

The report, structured around seven chapters, begins by providing both the **context** and an **overview of Zambia's structural vulnerabilities** (Chapters 1 and 2), and continues by presenting the Stress Test Tool used to assess the level of adaptiveness of the country's social protection system (Chapter 3). Chapter 4 outlines both the conceptual framework utilized to provide a quantifiable measure of those who are vulnerable to poverty in Zambia, as well as the results of the analysis. Furthermore, Chapter 5 broadly **illustrates the social protection landscape in the country**, while Chapter 6 presents the **results yielded by Module 2 of the Stress Test tool exercise**, followed by a concluding section offering **key recommendations** aimed at advancing the ASP agenda in Zambia (Chapter 7).

To fully unleash its socio-economic potential, Zambia needs to address structural issues and vulnerabilities ranging from a stark rural-urban divide, as shown by the sizeable divergences in poverty rates, consumption growth, and food security levels. The country's economy is prone to a range of covariate shocks, especially macroeconomic shocks and natural disasters. Zambia's exposure to **climate change jeopardizes the productivity of its agricultural sector**, which accounts for a large share of the country's workforce. **Such challenges have been exacerbated by the Coronavirus Disease 2019 (COVID-19) pandemic**, which has driven the country into a deep recession, resulting – among other repercussions – in a **further reduction of the GRZ's fiscal space allocated to basic public service delivery.**

Stress Test Results – Part 1

The results yielded by the analysis carried out within the framework of this Stress Test **exercise reveal that two thirds of the Zambian population is expected to be poor,** either because their expected consumption levels are too low or because they are expected to face a negative shock they cannot cope with**.** The study shows that while the prevalence of vulnerability is high at national level, it also varies significantly across territories. For instance, vulnerability to poverty is more prevalent in rural areas and in poorer provinces than in urban areas and more developed provinces, such as Copperbelt and Lusaka. **The results suggest that the source of vulnerability to poverty in Zambia is mainly structural** (poverty-induced vulnerability)**.** Nevertheless, the results also indicate that vulnerability driven by exposure to shocks (risk-induced vulnerability) becomes more relevant as income grows. Moreover, results show how idiosyncratic and covariate shocks contribute in a similar measure to risk-induced vulnerability in the country. Lastly, cushioning exposure to shocks is also critical to prevent further impoverishment among the structurally vulnerable. Based on these results, the analysis estimates that **58 percent of the population of the Zambian population – or the equivalent of 12 million people – would require additional assistance in the event of a shock.** To provide context, the current SCT program reaches approximately 1.3 million households – or 6.25 million people. Such results highlight the overall need to strengthen social protection programs that enhance resilience and promote human capital growth and economic opportunities in Zambia.

Stress Test Results – Part 2

Starting from the review of the two most recent shock responses, the 2019 drought and COVID-19, carried out through consultations with relevant government and non-government stakeholders, and a thorough desk review of available literature, it has been possible to **determine which areas of social protection in Zambia still require strengthening from an adaptability standpoint**. In a context affected by cyclical climate shocks, the concept of ASP – which lays out a framework for guiding the design of social protection programs that cushion the most vulnerable from recurring shocks, while at the same time building their resilience capacity – is especially pertinent and a priority for the country.

Based on the results of the Stress Test tool, which is comprised of four key building blocks (Programs and Delivery Systems, Data and Information, Financing, and Institutional Arrangements), **the level of adaptability of Zambia's current social protection system was rated as 'nascent'** at the time that the diagnostic was undertaken in late 2022. Noteworthy, however, are the GRZ's forthcoming enhancements of its extant social protection mechanisms, especially around the Data and Information systems building block.

The assessment has highlighted the **urgent need for the integration of a shock-responsive element into the SCT program** – the GRZ's flagship social protection program. It is therefore essential to continue building on the investments of Government-owned infrastructure to enhance the versatility of the SCT program. The recent COVID-19 response has helped shed light on some of Zambia's **shortcomings in scaling-up its social protection program in times of shocks**, ranging from the fragmented coordination in deploying assistance to affected households, to the **lack of both a social registry** and a **centralized early warning system (EWS)** that can support decision-making, as well as the **absence of disaster risk management (DRM) and financing instruments**.

Some of the key findings of each building block are outlined below.

Building Block 1 – Programs and Delivery Systems – 2.9/5: The Programs and Delivery Systems block is among Zambia's highest rated ASP building blocks. The Stress Test has successfully reflected the **GRZ's tremendous efforts over the past decades in implementing relevant programs at national scale with enough coverage** to positively impact resilience-building. Thanks to its growing operational and technical capacity, the MCDSS has successfully enhanced the role of social protection in Zambia, including in times of shocks. Some of the **areas that require strengthening in this building block are the benefit adequacy** which needs to be reassessed on a rolling basis due to inflationary trends, and the **need to create stronger linkages between the SCT and the other programs** run by the GRZ, including the Public Welfare Assistance Scheme (PWAS) and its Orphans and Vulnerable Children Bursaries and Scholarships program (OVC) component. Moreover, on-going initiatives, such as the national roll-out of the **Single Window Service initiative, could help beneficiaries easily access a menu of complementary basic social services** they might require.

The assessment has also shed light on the promising existing elements of delivery systems to support the prompt deployment of shock responses, especially **effective communication mechanisms that can be leveraged in times of shock** to disseminate relevant information to beneficiaries at community level. Further developments are required to **strengthen the Grievance Redress Mechanism (GRM)**, and the **interoperability between the SCT and other social protection programs**.

Payment mechanisms are currently undergoing a major digital transformation within the SCT program, with mobile cash transfers having been identified as the preferred transfer modality. It is expected that such a digital transformation, combined with robust *ex ante* institutional arrangements, will **allow the GRZ to rely on its own payment mechanisms and social**

protection platforms to promptly deploy assistance in times of shock. Technical issues that had been encountered during the vertical expansion of the SCT during the previous two shocks included the lack of mobile phones and individual beneficiary SIM cards.

Building Block 2 – Data and Information – 2.9/5: Remarkable progress has been achieved by the GRZ as far as strengthening data and information systems for social protection and DRM alike. **Social protection programs in Zambia do not rely on a national social registry, but rather on project-specific databases.** To this effect, as of July 2022, the SCT program database held over 5.7 million beneficiary records.[1] While promising forthcoming developments such as the Zambia Integrated Social Protection Information System (ZISPIS) will allow the GRZ and non-State actors to rely on a robust Management Information System (MIS), **the development of a national social registry should be perceived as an important investment for poverty reduction, with a view towards prompt deployment of emergency responses in times of shocks**. It is expected that the ZISPIS will lay the foundation for the development of a national social registry. The presence of robust data privacy regulations in the country and the experience accrued in making databases interoperable serve as a solid foundation for such efforts.

The assessment further highlighted the **significant progress achieved by the GRZ in the past years in working towards a centralized EWS** that can help inform the start of both rapid and slow onset covariate shocks, and which currently still relies on external technical and financial support. There have been active **efforts to introduce pre-agreed triggers that can inform the scale-up of social protection programs in Zambia**, especially with respect to droughts and floods.

Building Block 3 – Finance – 2.3/5: The 'Finance' building block of the ASP framework in Zambia has been rated one of the lowest due to **fiscal space constraints resulting from debilitating macroeconomic difficulties, combined with the lack of a disaster risk financing policy linked to social protection systems**. The World Bank is well placed to support the GRZ in advancing this crucial pillar of the ASP agenda and in **adopting context-specific disaster finance instruments to be deployed in the case of potential future shocks** in order to avoid resorting to post-disaster resource mobilization in an *ad hoc* manner.

The assessment has highlighted the need to address existing policy gaps in disaster risk financing and social protection. Moreover, **linkages between contingency plans for natural disasters (e.g., droughts and floods) and social protection programs should be fostered** to carve out a clearer and more prominent role for social protection within the framework of disaster relief support.

Building Block 4 – Institutions and Partnerships – 2.6/5: The Stress Test has underscored the substantial support provided by non-State actors (World Bank and UN agencies *inter alia*) in strengthening the GRZ's social protection systems in both normal times and in times of

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1   Consultations with MCDSS. It is expected that this number has significantly increased given the recent scale-up of the SCT caseload.

shocks. The delays observed during the COVID-19 response could have been avoided in part with **pre-agreed institutional arrangements and partnerships** encompassing clear roles and responsibilities for government and non-government partners alike. Furthermore, **addressing the existing policy gap between DRM functions and social protection systems would allow for the development of more realistic and effective contingency plans** with clear and actionable roadmaps for implementation.

It is essential to recognize the role of social protection in DRM at policy level as a means to ensure smooth coordination between the Disaster Management and Mitigation Unit (DMMU) and MCDSS. Stronger synergies between the two key disaster relief partners in Zambia, complemented by the support of non-governmental organizations (NGO) and UN actors in the short- to mid-term, can grant success to future government-led shock responses in the country. **The development of the SOPs envisaged by the SSRSP project are expected to help determine roles and responsibilities of all actors in times of shock**, thus contributing to the development of a social protection system that can be considered 'responsive by design'.

Key recommendations

» **It is imperative to define a scalability framework for social protection** to be activated in times of shocks, to guarantee coordinated large-scale shock responses channeled through the SCT.

» **Developing sustainable social protection financing strategies can facilitate early GRZ-led shock responses,** hence minimizing the negative impacts caused by shocks on people's lives and livelihoods. The World Bank is committed to support the GRZ in scoping the potential to introduce risk financing options, including contingency financing and market-based instruments in support of ASP systems in Zambia.

» **The GRZ needs to build on the momentum of the past years and continue investing in enhancing systems and mechanisms across the social protection delivery chain** as a means to shift from a reactive to a proactive approach in managing potential future crises and shocks that might affect the country. The recent COVID-19 and 2019–20 drought responses underscore the need for the GRZ to progressively rely more on its own systems to deploy timely, precise, and time-bound shock responses – a priority from reliability and affordability standpoints.

» **Investing in the development of a national social registry could enable the GRZ to promptly deploy accurate shock responses**, avoiding duplication of efforts and preventing the most vulnerable from resorting to the adoption of negative coping mechanisms as the result of a shock.

» **The GRZ needs to continue strengthening productive social protection systems in Zambia and linkages to basic social services** in order to build resilience in 'normal' years to mitigate the impact of disasters on households in times of shock. The support of the World Bank

within the framework of the GEWEL project, combined with other measures such as the Single Window Service initiative, are laying the foundation for bottom-up socio-economic empowerment in Zambia. It is in fact recognized that well-sequenced social protection programs with clear graduation pathways that have both protective and productive components can enable vulnerable households to escape intergenerational poverty traps.

Finally, it is important to continue working on expanding the outreach and coverage of the Keeping Girls in School (KGS) and Supporting Women's Livelihoods (SWL) interventions[2] and to assess the effectiveness of other social protection-affiliated initiatives (e.g., the 1,000 Days Nutrition pilot) in order to provide vulnerable households with tailored support based on their needs and to drive socio-economic empowerment through a bottom-up approach.

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2   The KGS and the SWL are two initiatives embedded in the GEWEL project framework that aim to increase access to livelihood support for women and access to secondary education for disadvantaged adolescent girls in extremely poor households across Zambia.

CHAPTER 1. Introduction

The Government of Zambia has made considerable progress in expanding the coverage of its social assistance programs; however, recent shocks have revealed shortcomings in the social protection system's ability to rapidly scale-up assistance. Such shortcomings include the fragmented coordination in deploying assistance to shock-affected households, the absence of both a social registry and a centralized early warning system (EWS) that can support decision-making, as well as the lack of disaster risk financing instruments earmarked for shock-responsive social protection.

The numerous shocks that Zambia is exposed to, ranging from macroeconomic imbalances to climate-related events, can have long-term effects on welfare and human capital, hence limiting the country's ability to effectively reduce poverty and inequality. Zambia's high exposure to climate hazards particularly jeopardizes the productivity of its agricultural sector, which accounts for a large share of the country's workforce. Empirical evidence suggests that climate variability in Zambia leads to a contraction of the economy and to an increase in poverty levels.[3] For instance, Zambia's GDP fell by approximately 6.6 percent while poverty increased by 2 percentage points during the severe drought events experienced between 1991 and 1992.[4]

Given its increasing vulnerability to shocks, it is essential for Zambia to continue investing in making its social protection systems more adaptive. Building on the lessons learned from the two most recent large-scale shocks experienced by Zambia, the 2019–20 drought and the Coronavirus Disease 2019 (COVID-19) pandemic outbreak, there is a clear need to make the existing social protection system more adaptive to shocks. Advancing this agenda would promote resilience-building for vulnerable Zambian households and communities to be better equipped to cope with the repercussions of country-wide shocks, as well as providing temporary relief support to households affected by shocks.

To develop an Adaptive Social Protection (ASP) system, the focus should not only be on the poor, but also on those households that could become poor as the result of a shock. For the government to increase the flexibility and adaptability of current social programs, an *ex-ante* identification of those who are vulnerable to poverty is required. In this context, standard poverty measures such as the poverty headcount ratio and other poverty indicators[5] can only assess current poverty status, and not those who are at risk of falling into poverty.[6] Quantifying how many households are vulnerable to poverty in Zambia could indubitably help guide the

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3 Ngoma, Hambulok et al. (2021a). Climate Shocks, Vulnerability, Resilience and Livelihoods in Rural Zambia. Policy Research Working Paper Series No. 9758.

4 Thurlow, J. et al. (2012). "Current Climate Variability and Future Climate Change: Estimated Growth and Poverty Impacts for Zambia." Review of Development Economics 16 (3): 394–411.

5 Foster, James et al. (May 1984). "A class of decomposable poverty measures." Econometrica, 52(3); and Alkire, Sabina and Foster, James. (2011). "Understandings and misunderstandings of multidimensional poverty measurement." The Journal of Economic Inequality, 9(2).

6 Skoufias, Emmanuel and Baez, Javier. (2021). Operationalizing Vulnerability to Poverty.

design of policies and/or efforts that aim at making social protection programs and systems more adaptive.

This report provides a quantification of the households vulnerable to falling into poverty as the result of a shock, as well as a qualitative analysis of the level of adaptability of the current social protection system in Zambia. The analysis is based on the Stress Test Tool developed by the World Bank, which assesses the adaptability of social protection systems and their ability to respond to shocks. The tool consists of two parts that gather valuable information to guide public policies or inform project investments. The *first* part of the tool evaluates the most relevant sources of risk that are expected to require a large response from the social protection sector and provides an estimate of the number and characteristics of people who would require support in the event of a shock, those vulnerable to poverty. This part of the tool also identifies the main sources of vulnerability: structural or poverty-induced (due to sustained low levels of income/consumption), and risk-induced (due to the exposure to covariate or idiosyncratic shocks). The *second* part of the tool assesses the capacity of the existing social protection system to scale up rapidly in times of shock, identifying potential constraints and highlighting areas for future investments.

This report is divided into 7 chapters. Chapter 2 provides an overview of the country's context and its structural vulnerabilities. The Stress Test Tool that is used to measure the level of adaptiveness of the country's social protection system is presented in Chapter 3. Chapter 4 introduces the conceptual framework for providing a quantifiable measure of those who are vulnerable to poverty in Zambia and presents the results of the quantitative analysis. A brief description of the current structure of the Social Protection System in the country follows in Chapter 5, while Chapter 6 presents the framework to assess the structure of scalability and adaptability of social protection in Zambia and presents the results of the qualitative diagnostic. Finally, Chapter 7 lists the key recommendations emerging from the results of the analyses as well as concluding comments.

CHAPTER 2. Country context

2.1. Current poverty and inequality scenario

Despite the tremendous progress achieved by Zambia in economic and human development over the past decades, the country still faces structural issues that hinder the unleashing of its full socio-economic potential. The country is characterized by a stark rural-urban divide which has only intensified over time, as the benefits of past economic growth accrued almost exclusively to urban areas while rural poverty remained high and stagnant.[7] At 76.7 percent, rural poverty in 2015 was 3.3 times higher than urban poverty. Large geographic disparities are also reflected in access to services, markets, and connectivity, which in turn hinder productive opportunities for the rural poor. Divergent consumption patterns across socioeconomic groups, in turn, drove consumption inequality, which increased from 52 in 2010 to 55.9 in 2015.[8] At that level, Zambia holds one of the highest levels of inequality in the region.

Figure 1: Inequality trends between 2004 and 2015 (Source: World Bank, 2021c)[9]
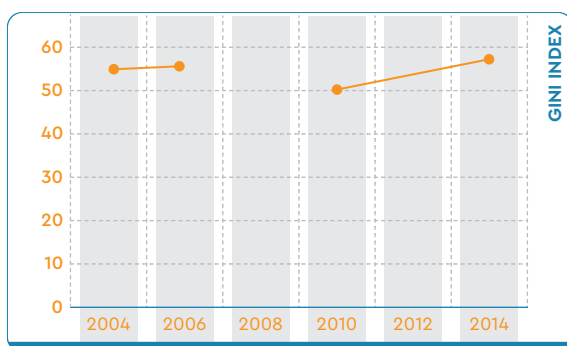
With a median age of 16.8 and a population growth rate of 2.93 percent, the Zambian population is among the youngest and fastest growing in the world,[10] but the country is not ready to harness the benefits of this demographic dividend. Zambia ranks 146th out of 189 countries in the Human Development Index (HDI), while its Human Capital Index (HCI) is only 0.4.[11] Despite the remarkable progress that has been achieved by the country, especially as far as health and education indicators go, Zambian children born today can on average achieve only 40 percent of their full productive potential throughout their lifetime. While universal primary education has virtually been achieved thanks to the Educational Reform of 1977,[12] secondary school coverage remains low at 43 percent. Furthermore, the consistent lack of productive opportunities for youths has driven the share of youth Not Engaged in Education, Employment or Training (NEET) up to 43 percent. A well-balanced combination of equitable socio-economic policies centered around human capital development, and a series of efficient

7   World Bank. (2012). Zambia Poverty Assessment: Stagnant Poverty and Inequality in a Natural Resource-Based Economy.

8   World Bank. (Forthcoming). World Development Indicators (WDI) – DataBank. Zambia. Zambia 2010–2015 trends have been updated to account for methodological improvements introduced by ZamStats in 2015.

9   World Bank. (2021c). Zambia – Social Protection and Jobs Public Expenditure Review 2021.

10   World Population Review. (2022). Zambia Population 2022 (Demographics, Maps, Graphs).

11   World Bank. (2019a). Helping Zambia Invest in Its Human Capital. Results Brief.

12   The Educational Reform of 1977 envisions nine years of compulsory basic education for all Zambians. Source: Lumpa, Mubanga. (25 October 2018). "Zambia's educational reforms since Independence". Zambia Daily Mail Limited.

investments, are hence required to harness the demographic dividend in Zambia, which would allow for rapid and inclusive development building on the country's labor force surplus.[13]

Figure 2: Youth and Overall Unemployment in Zambia between 2000 and 2020 (Source: World Bank, 2021c)[14]
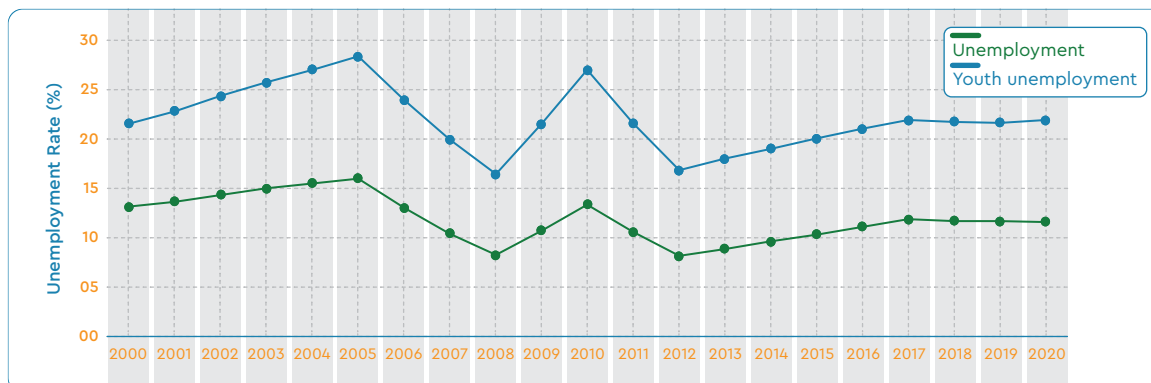
2.2. High susceptibility to shocks

2.2.1. History of macroeconomic shocks

Inflation in Zambia has grown exponentially over the past years, and the on-going Russia-Ukraine war is continuing to impact food prices in the country. Inflation rates have spiked to 22 percent in 2021, up from 9.2 percent in 2019.[15] While inflation receded to 11 percent in 2022, it remains above policy targets and inflationary pressures intensified again in early 2023.[16] The spike in the price of food items in Zambia follows the global trends of food price rises. Food inflation in 2021 was close to 7 percentage points higher than overall inflation. Between 2020 and 2022 food prices are estimated to have increased by about 40 percent.

The outbreak of the pandemic in 2020 exacerbated the country's macroeconomic challenges, driving Zambia into a deep recession. The repercussions of the pandemic contracted the Zambian economy by 2.8 percent, with job losses particularly concentrated in the tourism, manufacturing, and services sectors. Moreover, Zambia's debt servicing obligations, combined with the depreciation of the *kwacha*, the local currency, resulted in unsustainable increases in food and transport prices, as well as further shrinking the fiscal space allocated to basic public service delivery.[17] The crisis caused by the pandemic has been followed by an economic reprise in 2021 by 3.3 percent, and a positive economic growth outlook for 2022, mostly driven by a rise in copper prices and the recovery of the agricultural sector.[18]

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13   Government of Republic of Zambia. Ministry of Finance. (2015). Harnessing the Demographic Dividend: The Future We Want for Zambia.

14   World Bank. (2021c). Op. cit.

15   World Bank. (2023a). Inflation, consumer prices (annual %) – Zambia. World Bank Open Data..

16   World Bank. [2023b – Forthcoming]. Macro Poverty Outlook – Zambia.

17   African Development Bank Group. (Dec. 2020). Zambia Economic Outlook.

18   World Bank. (2022c). The World Bank in Zambia – Overview.

Figure 3: Job losses by sector as the result of COVID-19 (Source: World Bank, 2020)[19]
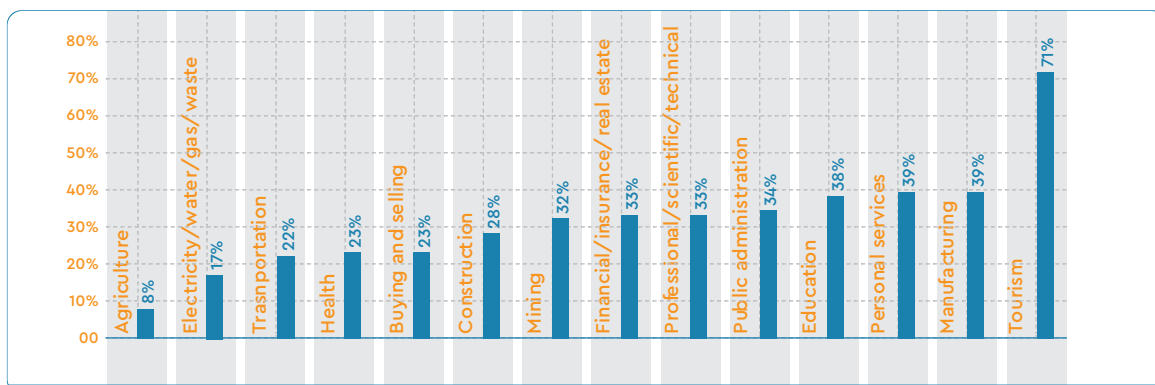
The sweeping socio-economic impacts of the pandemic have also deeply affected human capital gains in Zambia. School closures in the country have resulted in significant learning losses for school-aged children, while the adoption of negative coping mechanisms such as reducing food consumption and asset depletion have been widely observed across the country, especially in rural areas. To this effect, according to the results of a recent survey, 39 percent of households have reported skipping a meal due to loss in income, while 41 percent have expressed their concern about food availability for their households.[20]

2.2.2. History of climate shocks

Zambia is exposed to a number of climatic hazards, such as droughts and floods *inter alia*. Based on meteorological data from the past decades, Zambia is exposed to various climatic hazards, including river and urban floods, seasonal and multi-year droughts, as well as intense heatwaves, dry spells, and landslides. Between 1980 and 2020 Zambia experienced a total of 21 major floods and 6 drought events. Estimates suggest that excessive rainfalls and floods have cost Zambia USD 172 million in economic damage between 1982 and 2016.[21] According to risk vulnerability assessments and correlated vulnerability estimates, at least 76 percent of the population in Zambia has been found to be significantly vulnerable to poverty as the result of a shock.[22] The effects of climate change are particularly impacting the agricultural sector – especially the over 1.5 million Zambian smallholder famers who are being affected by erratic weather patterns and covariate shocks such as drought and floods due to their reliance on mono-cropping and rain-fed agriculture.[23]

19   World Bank. (2020). Op. cit.

20   Finn, Arden and Zadel, Andrew. (2020). Monitoring COVID-19 Impacts on Households in Zambia, Report No. 1: Results from a High-Frequency Phone Survey of Households.

21   World Bank. (2019c). Zambia Climate-Smart Agriculture Investment Plan: Analyses to Support the Climate-Smart Development of Zambia's Agriculture Sector.

22   World Bank. (2022b). Povcalnet Website.

23   World Food Programme. (2022). Zambia Annual Country Report 2021.

Figure 4: Figure 4: Average Annual Natural Hazard Occurrence between 1980–2020 (Source: World Bank, 2022a)[24]
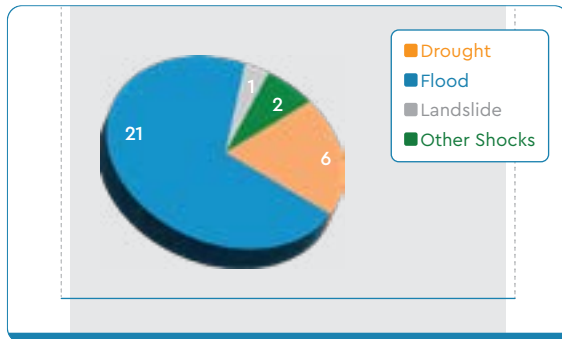
The negative effects of climate change are increasingly more tangible in Zambia, leading to erratic weather patterns and a rise in temperature by 1.3 degree Celsius per decade between 1970 and 2015.[25] According

to meteorological analyses, annual rainfall in Zambia has decreased by 1.9 mm per month per decade, causing major drought and flood events, with severe adverse impacts on the agricultural sector.[26] To this effect, the analyses that informed the World Bank's Zambia Climate Smart Agriculture Investments Plan (CSA-IP) of 2018 envision a reduction of productivity by 25 percent due to the repercussions of climate change,[27] with subsequent negative impacts on poverty rates and overall household welfare.[28] In light of such estimates, it is essential for the GRZ to continue investing in climate change mitigation and adaptation practices, as well as institutionalizing linkages between DRM mechanisms and social protection systems.

Figure 5: Temperature and Precipitation Trends in Zambia (Source: CIMA and UNISDR, 2018)[29]
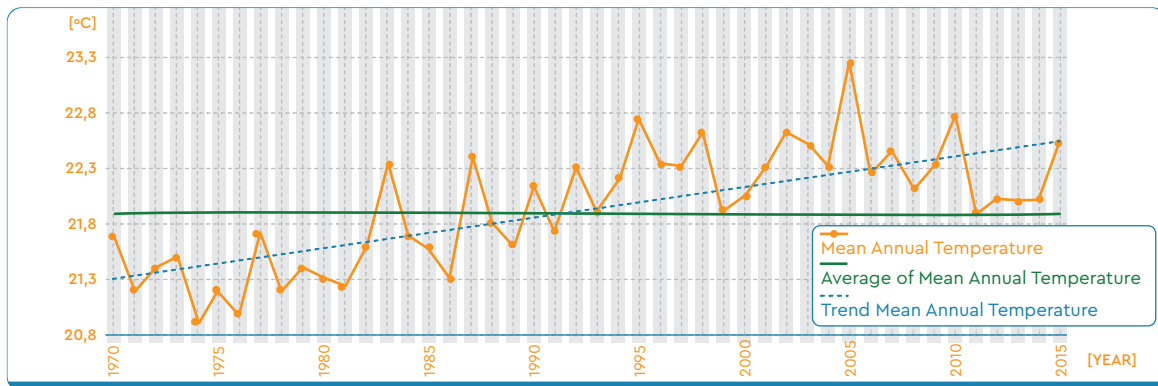
24 World Bank. (2022a). Climate Change Knowledge Portal – Zambia.

25 CIMA Research Foundation and UNISDR. (2018). Zambia Disaster Risk Profile.

26 Mseteka, Handsen. (2017). Investigating the Impacts of Climate Change Vulnerability on Livelihoods and the Environment – The Case of Luangwa District, Zambia. Research Paper.

27 Such a projection assumes that the GRZ falls short from achieving its climate-related commitments.

28 World Bank (2019c). Op. cit.

29 CIMA Research Foundation and UNISDR. (2018). Op. Cit.

CHAPTER 3. The Stress Test Tool

Social protection systems are critical to timely responses to shocks, helping mitigate their impacts and building resilience. In a context of increasing recurrence and intensity of shocks, well-designed and well-implemented programs that allow governments to respond in a pro-active manner to shocks can help reduce inequalities and build the overall resilience of the country. To this end, social protection systems need to be flexible to adjust to rapidly changing circumstances in order to ensure that the needs of the poor and vulnerable are met.

ASP offers a framework to facilitate rapid response and scale-up in times of crisis, bringing together social protection, disaster risk management (DRM) and climate change adaptation sectors. ASP systems have emerged to respond to covariate shocks, such as natural disasters, pandemics, conflicts, etc. A particular focus of ASP systems is the *ex ante* planning and invest-ments, which include the identification of processes, systems, triggers, actors, and responsibil-ities – all critical areas that will allow a rapid scalability of actions in times of crisis.

The Social Protection Stress Test Tool assesses the level of adaptiveness of national social pro-tection systems to scale-up and respond to the increased needs caused by the onset of covari-ate shocks. The Stress Test Tool was rolled out by the World Bank as part of the broader ASP framework, which is described in depth in the flagship document *Adaptive Social Protection – Building Resilience to Shocks* published by the World Bank in 2020. The report defines ASP as a "*a dedicated area of focus within the wider field of social protection, examining and iden-tifying the ways in which social protection systems can be prepared and enhanced ahead of large covariate shocks to build the resilience of poor and vulnerable households—before, during, and after such shocks occur"*.[30]

3.1. Stress Test Tool Part 1: Needs Assessment

The first part of the tool evaluates the most relevant sources of risk that are expected to demand a large response from the social protection sector and provides an estimate of the number of people who will require support in the event of a shock. This part of the tool identi-fies the potential needs of assistance in the event of shocks and assesses the degree to which the current system will need to increase support to existing beneficiaries (vertical expansion) or expand the coverage to protect those who could become poor (horizontal expansion), as shown in the figure below.

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30 Bowen et al. (2020). Adaptive Social Protection: Building Resilience to Shocks.

Figure 6: Social protection programs: Vertical and horizontal expansion
(Source: World Bank, 2021a)[31]
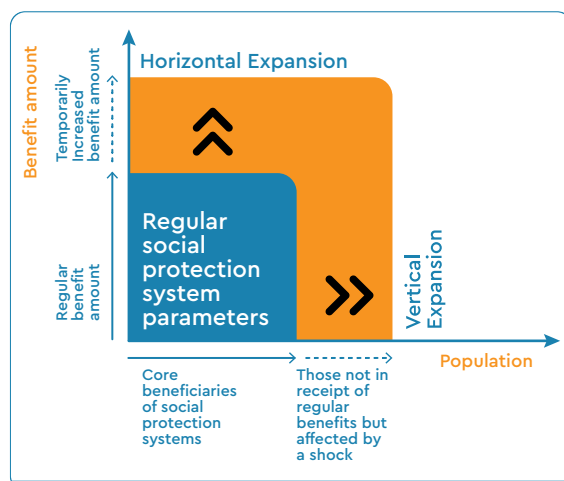
The assessment proposes three different approaches, depending on data availability, time-frame of the analysis, and precision of the required estimate. The three options are: i) a simulation approach, ii) a scenario approach, and iii) a multilevel approach. The first two approaches estimate the anticipated increase in demand coming from specific shocks, while the latter points to the magnitude of the need for social protection response regardless of the cause of the shock. The *simulation approach* is the most data intensive and time consuming. It combines historical data of a particular shock with information on hazards to model the impact of past shocks on poverty, and then simulates the potential impact of future events. The *scenario approach* is essentially a simplified version of the simulation approach. It draws on evidence from past negative shocks to make informed assumptions about the likelihood of various sizes of shocks and the potential impact on households. Alternative scenarios are estimated based on various assumptions about the size of the shock, the channels through which the shock affects different types of households, and the magnitude of the impact. Finally, there is the *multilevel approach*. Following a two-step hierarchical model, this approach determines the degree to which vulnerability to poverty is the result of covariate shocks and quantifies the overall size of the population that is expected to require assistance in a time of crisis. The modeling of this approach is complex, but there is a readily available tool that allows for its quick implementation. Table 1 below presents a summary of the data requirements and other characteristics of each of these approaches. Available evidence comparing the simulation and multilevel approaches for several countries in sub-Saharan Africa suggests that both methods provide similar results.[32]

31 World Bank. (2021a). Stress Testing Social Protection: A rapid appraisal of the adaptability of social protection systems and their readiness to scale-up. A Guide for Practitioners.

32 Skoufias, Emmanuel and Baez, Javier. (2021). Op. cit.

Table 1:   Summary of approaches (Source: World Bank, 2021a)[33]

	Data required	Pre-existing analysis required	Analysis to conduct	Information about specific shocks
Simulation approach	Household data Historical event series (about 20 years)	Relationship between shock and consumption for different households	Yes, do file available for select countries	Yes
Scenario approach	Household data	Information or analysis that can inform assumptions about which households will be affected and by how much, and how much prices will be impacted	Yes, do file available	Yes
Multilevel approach	Household data	None	Tool available	No

This report follows the multilevel approach to provide an initial diagnostic and an order-of-magnitude estimate of the size of the potential support needed in times of crisis. The main drawback of this approach is the inability to link the results to specific shocks. However, the benefits outweigh this limitation. On the one hand, Zambia's most recently available household survey was over seven years old at the time the stress test tool was undertaken. Moreover, the country has gone through significant changes during the last seven years, including sizable expansions of the flagship cash transfer program and other social protection programs. This limitation is quite relevant for the first two approaches which try to pinpoint coverage gaps for specific shocks, but it is less so for the third approach. On the other hand, this being the first vulnerability analysis for Zambia, it is useful to start with a general diagnostic and build from there. If it shows that the system is far from meeting the needs, this assessment is nonetheless sufficient to guide policy decisions; and more detailed analyses can follow, as needed.

3.2. Stress Test Tool Part 2: Scalability and Adaptiveness of Social Protection.

The second part of the tool assesses the capacity of social protection systems to scale up rapidly in times of shock, identifying potential constraints and highlighting areas for future investment. The questionnaire-style diagnostic assessment, comprised of four key sections and eight sub-sections, measures the robustness and level of development of all four key building blocks of the ASP framework and provides a scoring (1–5) and rating (Latent, Nascent, Emerging, Established, and Advanced). The results of Module 2 of the Stress Test help depict the levels of preparedness of social protection systems *vis-à-vis* the recurrent covariate shocks to which they are exposed, hence providing practitioners and governments with a deeper understanding of what investments and measures need to be carried out to cushion their citizens from the negative repercussions of those shocks.

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33   World Bank. (2021a). Op. cit.

Figure 7: The Structure of the Questionnaire-style Assessment of Part II of the Tool
(Source: World Bank, 2021a)[34]

1 PROGRAMS	2 DATA	3 FINANCE	4 INSTITUTIONS & PARTNERSHIPS
1. Programs *What kind of livelihoods/ employment protection programs exist?*	**4. EWS** *Is there an agreed trigger to initiate scale up of SP systems in shock response?*	**6.** *Does the government have the ability to analyze and model the potential cost implications of different shocks?* *Is financing in place to ensure a timely ASP response to disasters?*	**7. Gov. Leadership** *How effectively does the government lead the response plan and implementation?*
2. Delivery systems *Does the shock response expansion have specific design features to ensure inclusion of women?*	**5. Registries** *Based on approximation, are disaster prone areas covered by the registry of relevant databases?*		**8. Institutions** *Is there a coordination mechanism or institutionalized linkage between DRM and SP agaencies?*
3. Payment systems *What is the capacity of the payment system to handle a horizontal expansion of the main program?*			

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34 World Bank. (2021a). Op. cit.

CHAPTER 4.   Stress Tool Part 1 – Unpacking Vulnerability to Poverty

4.1. Conceptual framework

The design and implementation of an adaptive and flexible social protection system requires a comprehensive understanding of vulnerability to poverty. The conventional approach to conceptualize vulnerability is to consider the households which are just above the poverty line and below a pre-defined vulnerability line (often 1.5 times the poverty line). However, not all those above the poverty line are equally vulnerable to fall into poverty in the event of a shock. To ensure that the system can expand its coverage quickly and effectively during times of crisis, it is critical to rely on a dynamic framework to assess and understand who the poor are and who would need assistance under different shock scenarios in an *ex ante* manner.

In this report vulnerability is defined as "expected poverty".[35] In other words, vulnerability to poverty is understood as those households which are likely to be poor in the future, regardless of their current or past status. Implicit in this approach are two components: each household's predicted probability to be poor and a threshold above which a household is classified as vulnerable. As such, the approach identifies households that present a sufficiently high probability of experiencing a welfare level under the poverty line in the future. While connected, it is worth noting the difference between poverty and vulnerability. Vulnerability is an *ex ante* measure, which depends on households' expected ability to cope with shocks. Poverty, in contrast, is an ex-post measure, which depends on the specific circumstances realized at a given point in time. More information on the Conceptual Framework can be found in **Annex G.**

4.1.1. Modelling

To operationalize this concept of vulnerability to poverty, a quantifiable measure of those who are expected to be poor in the near future is needed, i.e., a model that predicts household welfare and provides a threshold against which to classify households as vulnerable or not. Such a model will make it possible to identify *ex ante* those vulnerable to poverty and understand their characteristics. In this report, the multilevel approach is applied, following the Skoufias and Baez model (2021).

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35 Economics literature offers a variety of approaches to conceptualize and measure vulnerability, though there is no consensus on how to identify the vulnerable for a particular population. See Skoufias and Baez. (2021). Operationalizing Vulnerability to Poverty for a brief description of some approaches, including i) vulnerability as the uninsured exposure to risk (VER), ii) vulnerability measured as expected poverty (VEP), iii) vulnerability defined as low expected utility (VEU), and iv) vulnerability in terms of low mean outcome or the risk of divergence from the mean, thus known as vulnerability by mean risk (VMR). (Skoufias and Baez. (2021). Op. Cit.; Gallardo, Mauricio. (2018). "Identifying Vulnerability to Poverty: A Critical Survey". Journal of Economic Surveys, 32(4)).

The multilevel approach adopted in this study estimates the prevalence of vulnerability through a two-level hierarchical model: a first stage that decomposes vulnerability into poverty or risk-induced, and a second stage that assesses the relative contribution of covariate and idiosyncratic shocks to risk-induced vulnerability. [36] The multilevel model, also known as the hierarchical model, models welfare at any point in time as being determined by household and community-level characteristics and their potential interactions, and an error term that consists of two unobserved components that captures a household-specific component (idiosyncratic) and a community-specific component (covariate). The first component varies across households, while the second component is common for all households in the same community. In the multilevel model, the variance of the idiosyncratic and covariate components is modelled as a function of household-level and community-level characteristics and their interactions. In this way, the model estimates the expected mean and the expected idiosyncratic and covariate variance of a household's welfare. The model then calculates the probability that a household's welfare may fall below the poverty line. If this probability is higher than a given threshold, then the household is considered vulnerable, while if the probability is lower, the household would not be considered vulnerable (see detailed methodology in Annex A).

Given the welfare model, the final size of the vulnerable population will depend on two parameters: the vulnerability threshold and the time horizon. This study adopts the standard threshold adopted in the literature, which identifies a household as vulnerable if its likelihood of falling below the poverty line in the next two years is equal to or greater than 50 percent. This implies that a household is considered vulnerable if the probability of becoming poor in any given year is at least 29 percent (0.29).[37] Ultimately, the size of the population that needs to be reached in an average crisis is determined by the estimated level of poverty-induced vulnerability plus the product of risk-induced vulnerability times the covariate risk.

4.1.2. Data

This analysis is based on the Living Conditions Monitoring Survey (LCMS) of 2015.[38] This was the latest household survey available for Zambia at the time the analysis was undertaken, which contains *inter alia* rich information on households' socio-demographic characteristics, including on education, health, labor market characteristics, and households' assets. Furthermore, this dataset is representative at the national, urban/rural, and provincial levels.

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36   This model is proposed by Skoufias and Baez (2021) and builds upon the methodologies proposed by Chaudhuri (2003) in Assessing vulnerability to poverty: concepts, empirical methods and illustrative examples; Christiaensen and Subbarao (2005) in "Towards an Understanding of Household Vulnerability in Rural Kenya." Journal of African Economies, 14(4); and Gunther and Harttgen. (2009). "Estimating Households' Vulnerability to Idiosyncratic and Covariate Shocks: A Novel Method Applied in Madagascar." World Development 37(7).

37   Following Skoufias and Baez (2021), let $P = Prob(\ln c_{ij} > \ln z)$ denote the probability of being above the poverty line in any given year. Then, assuming the poverty status of a household is independent over time, the probability of being vulnerable to poverty at least once in the next 2 years (i.e. using the 0.5 threshold), is then given by $v_{ij}, t+2 = 1 - P2 \geq 0.5$. Solving this equation for P yields $P = 0.71$. This implies that the probability of falling below the poverty line in any given year is 0.29 (= 1−0.71).

38   Government of Republic of Zambia. Central Statistical Office. (2016). Zambia 2015 Living Conditions Monitoring Survey Key Findings.

The information contained in the LCMS 2015 was complemented with information from the Project Targeting Index (PTI) platform for Zambia produced by the World Bank to enrich community-level information.[39] This platform was put together to facilitate the identification of geographic priority areas for interventions through the estimation of project-specific subnational composite indexes. This World Bank tool aims to support evidence-based, flexible, and transparent decisions at the time of implementing programs and interventions. The PTI contains valuable information from various sources such as national censuses and household surveys as well as others, and at various geographical levels, which helps guide subnational prioritization.

Finally, the above two sources of data were supplemented with data from the Vito Hazard Extreme Heat Maps.[40] These maps contain information of extreme heat hazards, which are classified based on the Wet Bulb Globe Temperature, are measured in centigrade (°C), and are available for 5-, 20-, and 100-year return periods. The information on these maps is overlayed with household geolocation information to identify whether the households are currently located in a high-risk geographical area. This information is then aggregated at different geographical levels to have a better understanding of the proportion of households which are expected to be affected by extreme heat in the near future or in the medium term, if current climate trends continue.

The variables considered in the model were chosen based on data availability and relevance for the country. The dependent variable in the model, which captures welfare, is the monthly consumption per adult equivalent, used in Zambia to compute official poverty statistics. The set of household-level explanatory variables include geographical location, the characteristics of the household head (age and education), household composition (household size and number of dependents) and living conditions (whether the household is overcrowded as well as variables that capture income earners in the household). The set of community-level characteristics, where community is defined at the district level, include access to services and percent of farm households within the community, among others. The complete list of variables and their description can be found in Annex B of this document.

4.2. Main Findings

4.2.1. Geography and profiles

Vulnerability to poverty in Zambia is high, with over half of the population being identified as vulnerable. The estimated vulnerability rate in Zambia is approximately 63 percent (Figure 8). In other words, *3 out of 5 Zambian households face a probability of at least 50 percent of falling into poverty in any given year in the next two years*. This rate is higher than the observed

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39 World Bank. [2023c]. Zambia PTI. Project Targeting Index (PTI) Dashboard.

40 World Bank. (2017). EH-GLOBAL-VITO-20. Global Facility for Disaster Reduction and Recovery (GFDRR). Maps are available from the GFDRR:

poverty rate in 2015 by 8.6 percentage points, highlighting the need to look beyond current poverty status in the design of social protection programs and other social interventions.

Figure 8: Poverty and vulnerability rates for Zambia, by area of residence (Source: Authors' calculations)
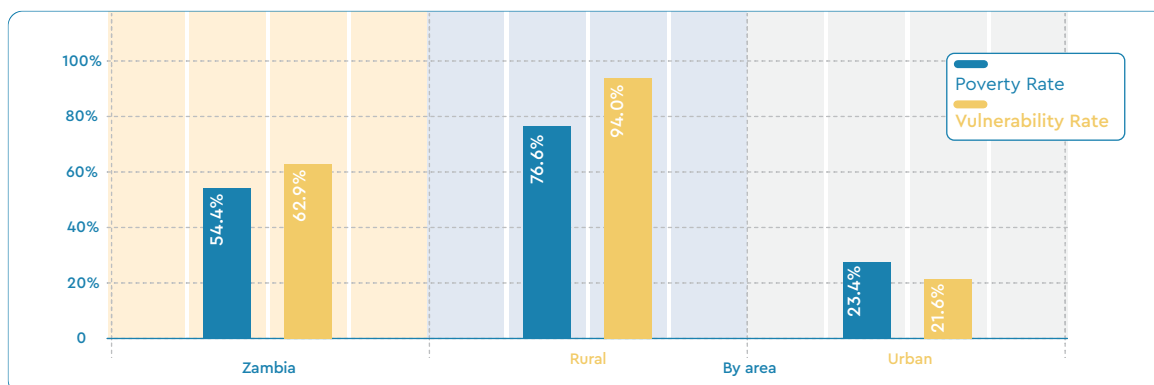
Consistent with the well-documented large rural-urban divide in the country,[41] the vulnerability rate in rural areas is over four times that of urban areas. This is larger than the three-fold difference in the observed poverty rate. Frequent exposure to natural disasters has partly contributed to these wide geographical disparities.[42] Furthermore, there are marked differences between poverty and vulnerability within rural and urban areas. In rural areas, the vulnerability rate is 17.5 percentage points higher than the poverty rate, meaning that many more households are expected to find themselves under the poverty line in the next two years relative to the observed poverty rate at a given point in time. In contrast, the urban vulnerability rate is not only closer in magnitude but also slightly lower than the urban poverty rate (21.6 percent versus 23.4 percent).
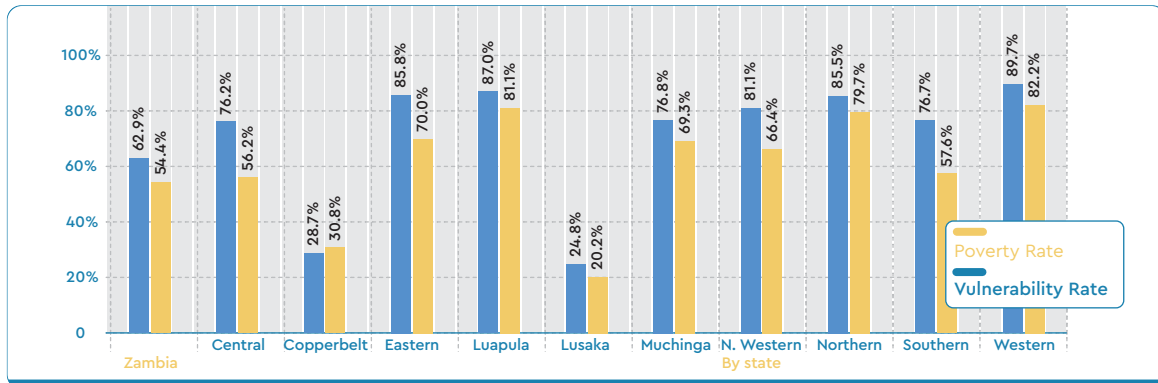
The prevalence of vulnerability to poverty mirrors the geographical variation observed in poverty rates. In general, the percentage of the population identified as vulnerable is higher in provinces with high poverty rates. This is the case of Luapula, Northern, and Western provinces. On the other hand, provinces with the lowest observed poverty rates, which also tend to be more urbanized, show the lowest vulnerability rates (Copperbelt and Lusaka) (Figure 9). Interestingly, with the exception of Muchinga, provinces in the middle of the poverty distribution present the highest difference between poverty and vulnerability rates. In Central, Southern, Eastern, and North Western provinces, the estimated vulnerability is 15 to 20 percentages points higher than the estimated poverty rate. These results suggest that moving towards a vulnerability framework may be particularly important for provinces that are neither extremely poor nor the better-off.

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41   World Bank. (2018). Republic of Zambia Systematic Country Diagnostic.

42   World Bank. (2018). Op. cit. and World Bank. (2021c). Op. cit.

Figure 9: Poverty and vulnerability rates by province of residence
(Source: Authors' calculations)

The prevalence of vulnerability to poverty also varies across different types of households. For instance, those living in farm households are 3.3 times more likely to be vulnerable than those living in non-farm households (Figure 10, panel b). Similarly, vulnerability is 3 to 3.6 times more prevalent among those living in households with less stable streams of income, such as those relying completely on income from self-employment and other employment types, relative to households relying on income as paid employees or employers (Figure 10, panel c). Furthermore, these differences in vulnerability across sub-population groups are more pronounced than the corresponding differences in poverty rates: 3.3 compared with 2.7 for farm- and non-farm households, and 3–3.6 compared with 2.7–3.2 for more- or less-stable streams of income. Interestingly, vulnerability and poverty need not move in the same direction. When comparing female-headed households versus male-headed households, the former are about 3 percentage points more likely to be poor but about 3 percentage points less likely to be vulnerable (Figure 10, panel a).

Figure 10: Poverty and vulnerability rates by households' type (Source: Authors' own calculations)
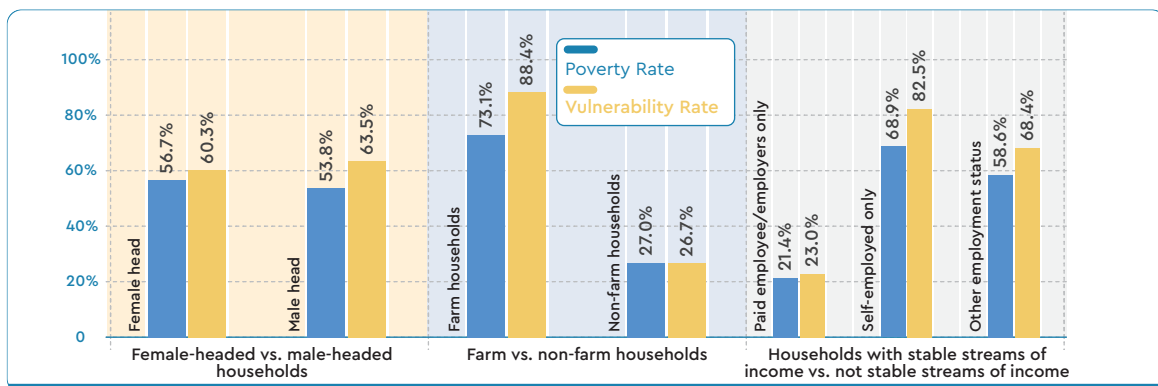
4.2.2. Exploring the sources of vulnerability

Vulnerability to poverty in Zambia is mostly driven by low endowments, particularly in poorer and less urbanized regions. Low consumption prospects due to low endowments (e.g., low educational levels, limited physical assets, etc.) account for nearly 83 percent of the estimated vulnerability rate (Figure 11, a). Notably, the vulnerability rate associated with risk remains remarkably close to 10 percent across all provinces in the country. As a result, the variation in vulnerability levels across provinces is largely explained by the prevalence of poverty-induced vulnerability. This in turn leads to the observed positive correlation between the prevalence of vulnerability and the share of vulnerability that is attributable to poverty (Figure 11, b). These results denote the need to continue addressing the chronic drivers of poverty while strengthening and/or increasing the flexibility and adaptability of social protection programs in these provinces. For example, conditional or unconditional cash transfers programs that facilitate investments in human capital are likely to be effective in contributing to the reduction of poverty in the short-term and to the accumulation of financial, physical, and human capital in the medium to longer term to fight poverty-induced vulnerability.

However, the contribution of risk-induced vulnerability becomes more relevant as income grows, accounting for about 50 percent in urban areas – 5 times higher than in rural areas. While risk-induced vulnerability accounts for only about 17 percent of the estimated vulnerability rate at the national level, its contribution becomes more relevant in wealthier and more urbanized provinces. In Copperbelt and Lusaka, it accounts for 38 and 45 percent, respectively (Figure 11). This pattern is not only observed within the country but also over time. Between 2010 and 2015, real consumption increased in urban areas by nearly 15 percent, while rural areas experienced a reduction of 1.5 percent (see Figure A3 in Annex E). At the same time, the contribution of risk-induced vulnerability in urban areas increased in absolute terms (from 49 to 54 percent) and relative to the contribution in rural areas (4.7 times higher in 2010 to 5.1 times in 2015). These findings suggest that resilience-focused interventions, such as social insurance mechanisms, may play a larger role in reducing vulnerability as the country continues developing.

Figure 11: Poverty-induced vs. risk-induced vulnerability (Source: Authors' own calculations)
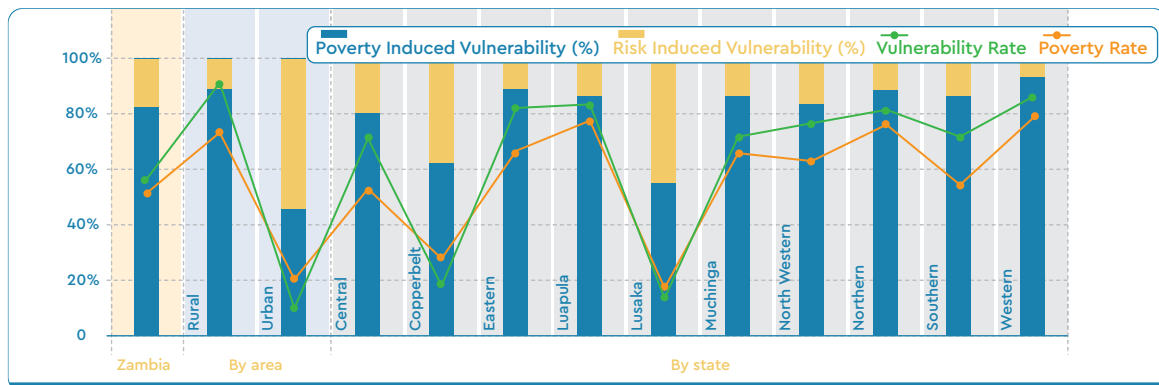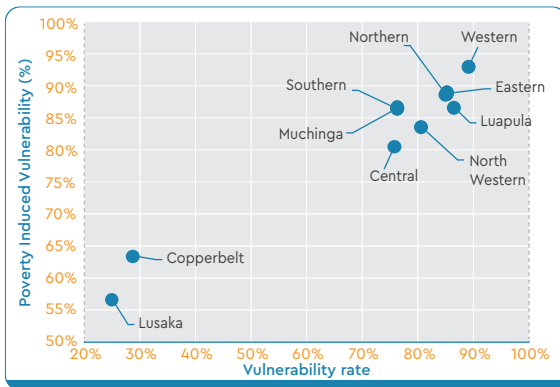
A similar pattern is observed across household types, in that those with highest vulnerability rates also present the highest contribution from endowments, while those with lower vulnerability rates see an increasing contribution from risk (Figure 12). It is noteworthy, for example, how risk accounts for only 12 percent among farm households but grows to 43 percent among non-farm households. Similarly, risk-induced vulnerability explains close to 50 percent of the vulnerability rate among households with employees or employers, in contrast to about 15 percent among those with less stable income sources. Female and male headed households, in turn, have relatively similar vulnerability rates and present a similar contribution from poverty and risk. These findings highlight the need to tailor policies to properly address the drivers of vulnerability most relevant to each group.

Figure 12: Sources of vulnerability by household type (Source: Authors' own calculations)
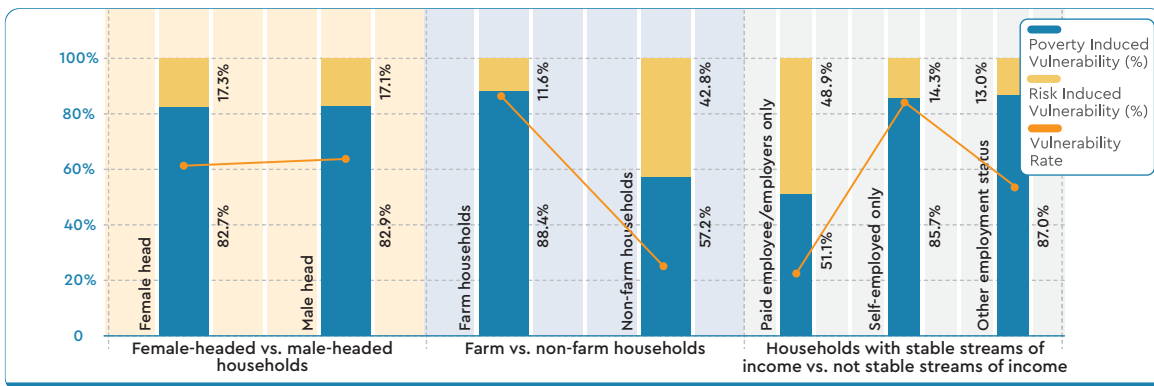
Even when vulnerability is mainly poverty-induced, addressing and preventing negative shocks is still of utmost importance. A high contribution of poverty-induced vulnerability means that on average consumption is expected to fall under the poverty line. It does not mean that shocks do not matter. In fact, shocks will only exacerbate the welfare of poverty-induced vulnerable households. While the focus should be placed on investing in households' endowments to raise their consumption profiles above the poverty line, intervening in the event of a shock or minimizing consumption volatility through resilience-focused interventions will contribute to permanently lifting such households out of poverty. In this context, the vertical expansion of a social safety net program would be a potentially effective adaptive strategy.

4.2.3. Covariate and idiosyncratic shocks

Covariate shocks are almost as relevant as idiosyncratic shocks in explaining risk-induced vulnerability at the national level. The sources of vulnerability among risk-vulnerable households can be conceptually split into idiosyncratic shocks (i.e., death of the primary breadwinner), which affect specific households, and covariate shocks (i.e., drought), which affect all households in a community at the same time. While risk-induced vulnerability cannot be perfectly categorized into these two sources, the model makes it possible to evaluate the relative contributions of each by analyzing the variance in welfare attributable to each type of shock. Among those households classified as vulnerable due to risk, 63 percent can fall under the poverty line when only the variance coming from idiosyncratic shocks is accounted for. Similarly, 56 percent of the risk-vulnerable households can fall under the poverty line when only the variance coming from covariate shocks is accounted for. This sets the ratio at 1.11 in favor of covariate shocks (Figure 13, a).

Figure 13: Relative contribution of idiosyncratic and covariate shocks to risk-induced vulnerability (Source: Authors' own calculations)

(a) By geographical locations
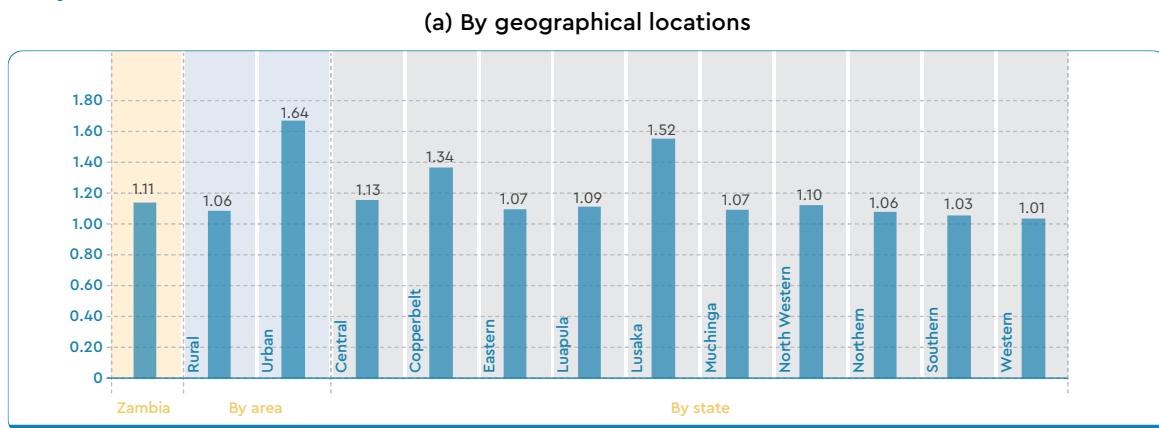
(b) Versus the share of risk-induced vulnerability

(c) By different households' composition
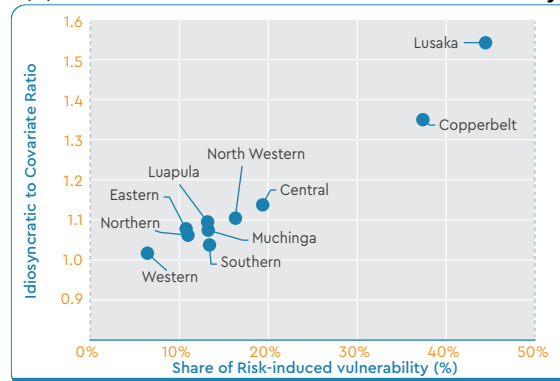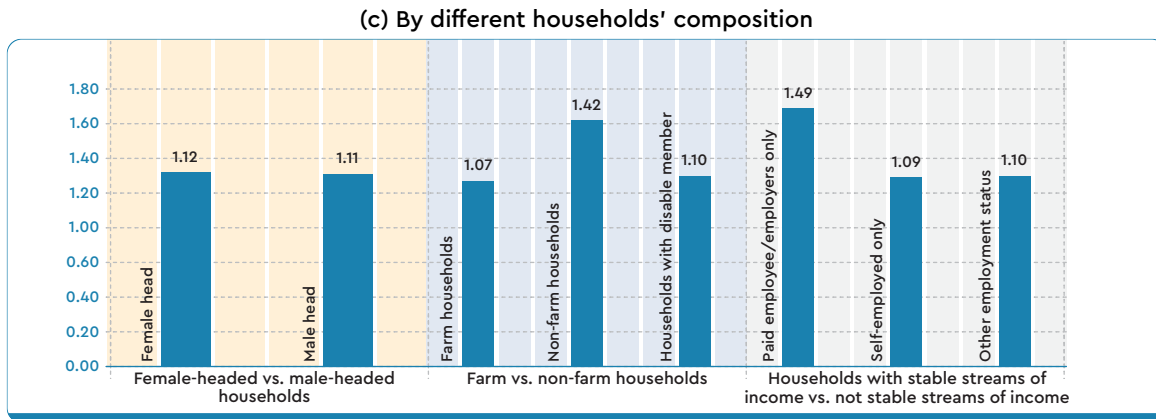
In the provinces with the highest vulnerability rates, covariate shocks are just as significant as idiosyncratic shocks, but are more difficult to insure against. The two most relevant covariate shocks households in Zambia face are weather shocks and macroeconomic shocks. Climate change models predict that droughts, floods, and extreme weather will only increase in frequency. Indeed, rural households reported natural disasters to be the most prominent shock they faced in 2015.[43] At the same time, households have very limited means to smooth consumption and insure against production and associated wealth losses.

Idiosyncratic shocks become more dominant in urban areas, in more developed provinces, and among less vulnerable household types. The contribution of idiosyncratic shocks to vulnerability in urban areas is 1.6 times that of covariate shocks. Similarly, the ratios are 1.5 and 1.3 in the provinces of Lusaka and Copperbelt, respectively. Panel b of Figure 13 shows a clear upward slope between the relevance of risk-induced vulnerability and the contribution of idiosyncratic shocks at the provincial level. As risk becomes more relevant relative to endowments, idiosyncratic risks also become more relevant relative to covariate risks. A similar pattern emerges across household types (Figure 13, c). Non-farm households and households with more stable income streams – for whom risk-vulnerability is more relevant than poverty-vulnerability – are more exposed to idiosyncratic risks than to covariate risks. These results suggest that developing policy instruments for households to insure against idiosyncratic risks constitutes a crucial component of a comprehensive social protection policy.

4.2.4. Quantification of scalable needs: poverty-induced plus covariate risks

In the event of a shock in Zambia, 58 percent of the population (approximately 12 million people) is expected to need prompt social protection assistance either from a vertical or horizontal expansion of existing programs. The scale of need is measured by the proportion of the population that is vulnerable to poverty due to low endowments (poverty-induced), or due to risks associated with covariate shocks. These two components summarize the number of people that are likely to be in poverty in a typical crisis. This share is slightly lower than the vulnerability rate but higher than the poverty rate for 2015 (Figure 14).

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43 World Bank. (2021c). Op. cit.

Figure 14: Vulnerability and poverty rates, and expected coverage needs (% of the population) – (Source: Authors' own calculations)
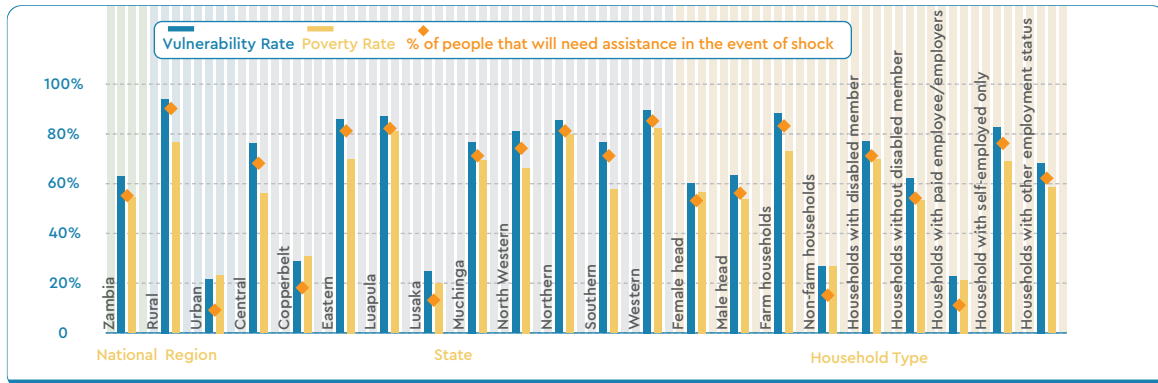
Of the 12 million Zambians that may need assistance in the event of a shock, 1.2 million may do so due to their exposure to covariate shocks, and the remainder due to sustained low levels of consumption. The expected coverage needs and the composition between endowments and shocks differ across geographic areas (Figure 15). For instance, the expected coverage needs due to exposure to covariate shocks is almost 6 times higher in rural areas relative to urban areas, while coverage needs due to structural poverty is 8 times higher in rural areas relative to urban areas.

Figure 15: Expected coverage needs (% of the population) by source of vulnerability (Source: Authors' own calculations)
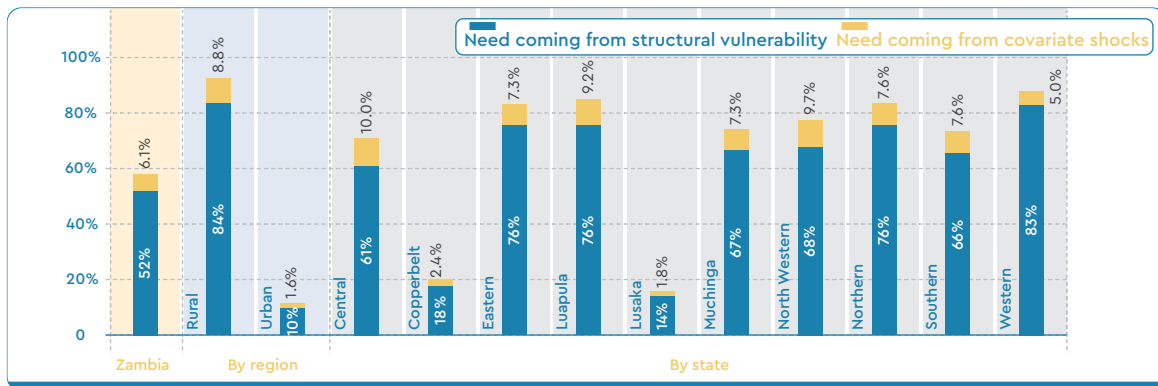
The size of the population that needs to be reached in times of a crisis varies with the choice of the poverty threshold and its associated vulnerability threshold: the lower the poverty threshold, the higher the percentage of people that will need assistance in the event of a shock. For instance, lowering the poverty threshold from 50 to 40 percent (e.g., defining as vulnerable those who have at least a 40 percent probability to be under the poverty line in the next two years),[44] increases the share of the population that would need assistance by 2.6 percentage points (from 58 percent to 60.6 percent). In contrast, a higher poverty threshold, for instance

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44   This is equivalent to a vulnerability threshold of 0.23.

of 60 percent, reduces the percentage of people that would need prompt support to 55.8 percent (see Figure A4: Expected coverage needs (percentage of the population) vs. poverty thresholds). Therefore, the selection of a tighter or looser threshold has implications not only for identifying those who are vulnerable to poverty but also for those who might need rapid assistance in the event of a crisis.

4.2.5. Cross-country comparisons

A cross country comparison suggests that vulnerability rates are usually higher than poverty rates, though the reverse can occur at low levels of poverty. However, the largest differences tend to be concentrated at mid-levels of poverty. There is a positive relationship between poverty and vulnerability: the higher the proportion of the population living in poverty, the larger the proportion of the population identified as vulnerable to poverty. This pattern is observed both at the national level as well as at lower levels of geographical disaggregation (Figure 16Figure 16, a). Additionally, vulnerability rates tend to be higher than poverty rates. However, this pattern breaks at low levels of poverty (under 20 percent) when vulnerability rates can be lower than the poverty rates just as often as they are higher (Figure 16, a). Although large differences can be found throughout the full poverty distribution, a cross-country analysis is consistent with the findings from Zambia: the largest differences between poverty and vulnerability rates are mostly found in provinces and locations with mid-levels of poverty (in the 30–60 percent range) as shown in Figure 16, b.

Figure 16: Poverty vs. vulnerability across countries (Source: Authors' own calculations)

(a) Poverty vs. vulnerability rates at the national and subnational levels (select countries)
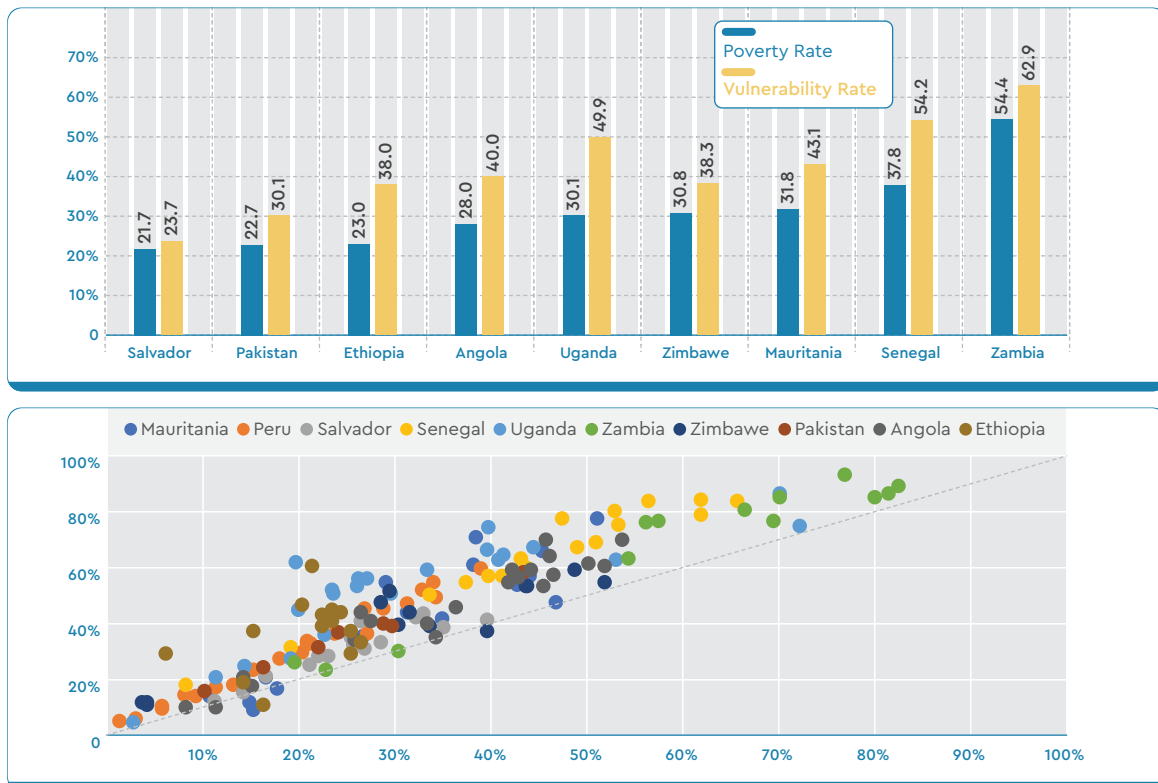
(b) Difference between Vulnerability rate and Poverty Rate (select countries)
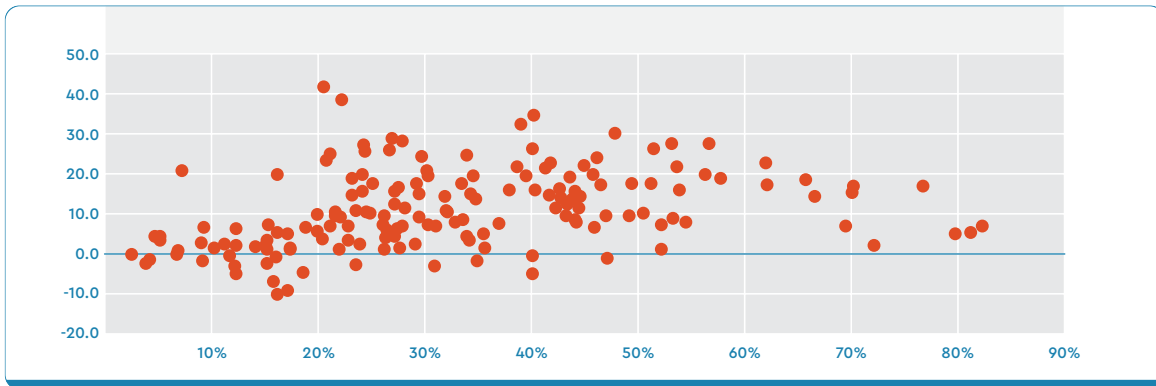
Poverty-induced vulnerability is more prominent in poorer countries/states, while risk-induced vulnerability plays a larger role in more developed countries/states. The multi-country analysis confirms that in places with higher vulnerability incidence, vulnerability is largely explained by low levels of endowments (or poverty-induced vulnerability) while the contribution of risk is lower. In contrast, in locations with a lower vulnerability incidence, the role of low endowments or low consumption prospects is less prominent, and risk helps explain vulnerability to poverty. Such findings suggest that as economies grow and more households experience an increase in their expected consumption, it becomes increasingly important for social programs to expand their focus to include risk-induced vulnerability.

Figure 17: Poverty-induced vulnerability and vulnerability rates
(Source: Authors' own calculations)
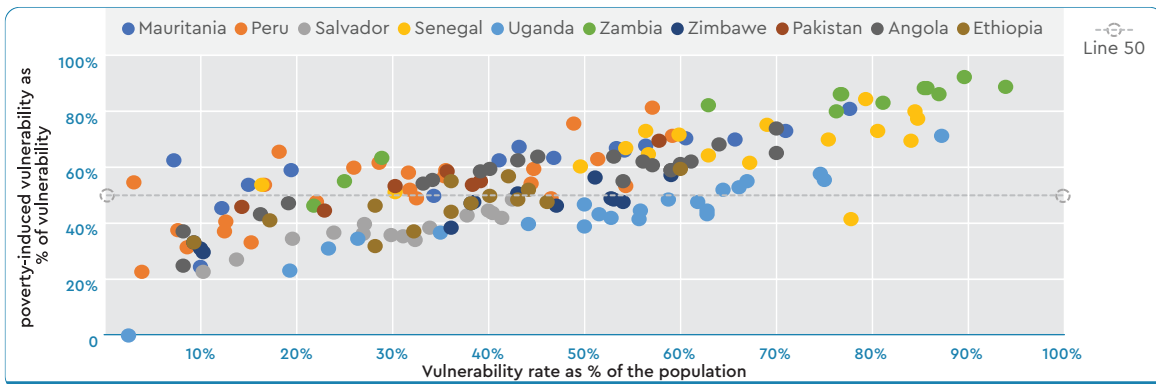
The contribution of idiosyncratic shocks to risk-induced vulnerability is consistently higher than the contribution of covariate shocks, and this difference grows as risk-induced vulnerability becomes more relevant. On the other end, the more severe covariate shocks are, the higher the incidence of vulnerability. Notably, the overall observations in Zambia hold in a cross-country perspective. Firstly, idiosyncratic shocks always contribute more to risk-induced vulnerability than covariate shocks, as the ratio is always above 1. Secondly, this difference grows as the contribution of risk to total vulnerability increases (Figure 18, a). Therefore, the more important risk is in explaining overall vulnerability, the more important it is to look at idiosyncratic shocks

as the major source of risk-vulnerability. Thirdly, covariate shocks are most important in places with high levels of vulnerability. Places with a high incidence of vulnerability tend to have the ratio of idiosyncratic to covariate shocks closest to one. To this effect, Zambia is the country with most observations closest to such a threshold. That is, even though at high levels of vulnerability risk is less important than poverty, it is in those cases where covariate risks are just as important as idiosyncratic risks. The two observations may be related, given that the high relevance of covariate risks could be what is keeping such communities' endowment levels low, thereby making poverty-induced vulnerability the most important.

Figure 18: Idiosyncratic to covariate shocks ratio comparison across countries
(Source: Authors' own calculations)

(a) Idiosyncratic to covariate shocks ratio vs. share of risk-induced vulnerability
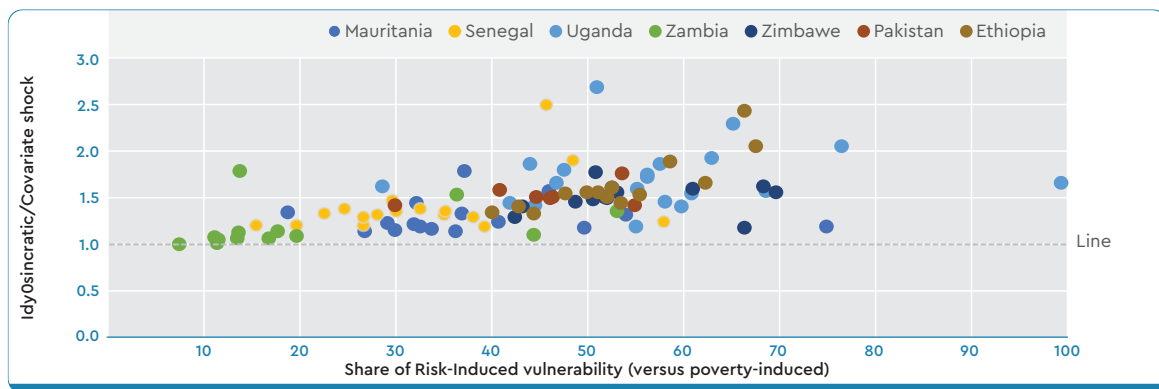
(b) Idiosyncratic to covariate shocks ratio vs. vulnerability rate
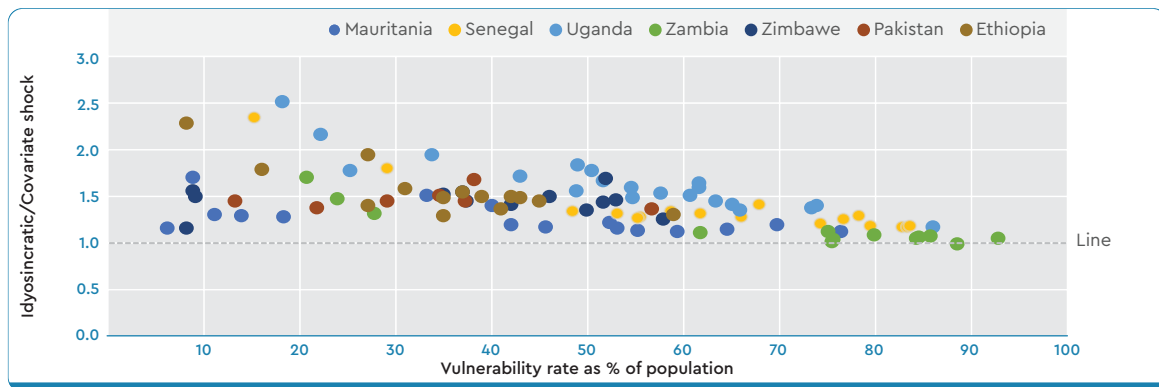
In light of its susceptibility to shocks, it is crucial for Zambia to persist in enhancing the adaptability of its social protection systems. Drawing from the insights gained through this quantitative analysis around the country's exposure to covariate shocks, there is a clear need to intensify efforts to broaden the country's social protection system's capacity to effectively address the heightened needs caused by such extreme events. The next two chapters provide a detailed exploration of the country's existing social protection landscape and present the outcomes derived from the qualitative section of the Stress Test assessment (Module 2), which shed light on the current systems' gaps and areas for further investment from an adaptability perspective.

CHAPTER 5. The Zambian Social Protection System

5.1. Social Protection – Legal and Institutional Framework

Social protection in Zambia is regulated by a policy and two development frameworks. The Eighth National Development Plan 2023–27 (8NDP), in line with the Zambia Vision 2030 and the African Union Agenda for 2063,[45] sets human and social development as main priorities for Zambia, alongside economic transformation, environment, and good governance. And while the National Social Protection Policy (NSPP) does not explicitly mention ASP, it recognizes the importance of financing and expanding the coverage of large-scale social protection programs to tackle some of the country's structural issues, especially poverty, malnutrition, and youth unemployment caused by the unavailability of productive opportunities. Based on recent consultations, there are on-going efforts to review and develop a new social protection policy for Zambia that will capitalize on the valuable lessons learned from the drought and COVID-19 crises, and that will explicitly mention the role of ASP during shock responses.

The Integrated Framework of Basic Social Protection Programs (IFBSPP) was developed by the GRZ in 2018 to operationalize the pillars of the NSPP. The IFBSPP is in line with the objectives of the 7NDP (now replaced by the 8NDP) and frames social protection efforts in Zambia from a life-cycle standpoint, determining key actions to be taken to address specific vulnerabilities for each age group and to make social protection interventions more coherent and harmonized. The IFBSPP process brought together all relevant government and non-government stakeholders to catalyze efforts towards the establishment of a social protection floor that is protective, promotive, and transformative, thanks to the creation of linkages with complementary basic services on a needs basis.[46] While the IFBSPP thoroughly recognizes the various vulnerabilities encountered across the lifecycle, it does not specifically emphasize the need to build ASP systems that can cushion households across all age groups.[47]

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45 The African Union Agenda for 2063 is a strategic framework endorsed in 2013 to advance socio-economic transformation efforts for Africa over 50 years.

46 Government of Republic of Zambia. Ministry of Community Development and Social Services (MCDSS). (2018). Integrated Framework of Basic Social Protection Programmes.

47 It is worth noting that while the Cash Plus and the Single Window Initiative of the IFBSPP are in the process of being rolled out, many GRZ ministries and agencies, as well as non-State actors, still need to be fully sensitized on such initiatives.

Figure 19: The Integrated Framework across the Pillars of the NSPP
(Source: Government of Republic of Zambia. MCDSS. 2018)[48]

Integrated Framework of Basic Social Protection Programmes across the NSPP Pillars		**Transformation Pillar**
		» Disability Allowance
		» Grants in IEMFS
		  • Including Disability – targeted grants
		  • Including Women's Empowerment grants
		  • Induding Youth Empowerment grants	

		Promotion Pillar » IEMFS: Loans » Improved Productivity: F(I)SP » Improved Productivity: Public Works » Secondary School Fee Waiver (KGIS) » Tertiary Bursaries	

		Protection Pillar
		» Subsidized NSHI
		» SCT
		  • Including Perinatal Care Allowance
		» HGSM
		» PWAS
		  • Including OVC Bursaries	

5.2. Social Protection – Key actors

The social protection arena in Zambia is dynamic and prolific thanks to the strong leadership of the GRZ through the MCDSS, and the substantial support provided by development partners. The strong government leadership around social protection helps development partners in Zambia align with its priorities to improve its existing programs and roll out innovative pilots. With decades of experience and know-how in implementing and managing social protection programs in support of human development, the MCDSS is the key social protection actor in Zambia and is supported by a number of non-State actors. To this effect, international actors cover an important role in providing technical and financial support to the GRZ for its social protection programs, especially the World Bank; Swedish International Development Agency (SIDA); Foreign, Commonwealth and Development Organization (FCDO); Irish Aid; Swiss Agency for Development and Cooperation (SDC); German Deveopment Cooperation through the Kreditanstalt für Wiederaufbau (KfW); and the United Nations (UNICEF, WFP, FAO, ILO).

The operational capacity of the MCDSS has steadily grown over the years and is now the GRZ-mandated ministry for the deployment of shock responses through cash transfers. The MCDSS has decades of experience managing social assistance programs and its operational and technical capacity has been steadily strengthening, as shown by the successful implementation of large-scale programs such as the SCT and the Supporting Women's Livelihoods (SWL). The MCDSS has been implementing programs and offering access to basic services for the most vulnerable at both national and sub-national levels. The World Bank and partners such as UNICEF and others have been collaborating closely with the MCDSS in further strengthening its capacity, as well as its social protection platforms and infrastructure in order to better assist the most

48 Government of Republic of Zambia. Ministry of Community Development and Social Services (MCDSS). (2018). Op. cit.

vulnerable segments of society in an equitable and precise manner. The COVID-19 pandemic and the recurring shocks that affect Zambia have prompted the MCDSS and the World Bank to collaborate closely in making social protection more adaptive. The MCDSS is also responsible for various statutory bodies and institutions, including the National Trust for the Disabled, the National Vocational Rehabilitation Centre, the Council of NGOs, and others.

Box 1: Emergency Cash Transfers Against the Pandemic

In response to the COVID-19 pandemic, and in line with the national multisectoral contingency and response plan informed by the Vulnerability Assessment Committee (VAC), a number of UN agencies and CSOs supported the GRZ in deploying ECT support to vulnerable households across 22 districts of the country for a six-month period. This temporary support package helped cushion a total of 461,741 vulnerable beneficiaries already enrolled in the SCT program from the sweeping socio-economic impacts of the pandemic on their lives and livelihoods. Depending on the targeted district, beneficiaries either received bi-monthly payments of 800 kwacha per month, tri-monthly payments of 1200 kwacha, or a one-off payment of 2400 kwacha. Such support was complemented by sensitization on WASH practices to contain the threat posed by the pandemic. A Lessons Learned document developed by WFP Zambia has highlighted how despite the challenges encountered in kickstarting the response, the support had very positive impact on beneficiaries' "diet diversity, per capita expenditure, food expenditure share, and investment in livestock and assets". Different sources indicate how despite still relying on external support to deploy a timely shock response, the level of preparedness and ownership displayed by the GRZ was instrumental in granting success to the deployment of the ECT support package. Moreover, the existence of robust social protection infrastructure in the framework of the SCT allowed for a relatively smooth vertical expansion of the program, in contrast to the horizontal expansion which experienced delays due to technical and institutional challenges.

Source: MCDSS and UN Zambia, 2021

Box 2: Single-Window Service Delivery Systems

The United Nations Joint Programme on Social Protection (UNJPSP-II) co-led by ILO, UNICEF, and the World Bank, aims at streamlining benefits and service delivery through the establishment of single-window centers that could also benefit vulnerable and marginalized groups in need of tailored assistance. By establishing 'one-stop shops' in proximity of remote communities across

Zambia, vulnerable individuals and households can easily access a menu of social protection services ranging from protective to productive measures, based on their needs. The concept has been operationalized in six districts and has been capitalized upon during the COVID-19 ECT response with encouraging results. Worldwide evidence shows how integrated service delivery systems such as Single Window Service have the potential of bringing governments closer to their citizens, especially by disseminating relevant social protection-related information in a timely manner and guaranteeing transparency.

Source: UN Joint SDG Fund, 2022

Over the past years, the World Bank, United Nations agencies, and Civil Society Organizations (CSOs) have intensified efforts to support the GRZ in enhancing its existing social protection systems and in responding to recurring shocks. Development partners have been working closely with the GRZ to strengthen Zambia's social protection system: recently efforts have been intensified to make the system more responsive to the recurring shocks to which the country is exposed. Building on the World Bank-financed GEWEL project, which is assisting the GRZ in layering a set of interventions additional to cash transfers to drive the socio-economic empowerment of girls following a bottom-up approach, the World Bank-financed SSRSP project is laying the foundation for the integration of a shock-responsive element to the SCT, whose continuity has been jeopardized by fiscal challenges. Investing in stabilizing financing for the social protection sector is in fact crucial to avoid vulnerable households from falling into acute poverty, which can have irreversible repercussions on human capital and food security. Moreover, the SSRSP encompasses the pre-positioning of financing to allow for an expansion of the SCT to be drawn upon in the event of a shock. Such a measure will make it possible to pilot the pre-positioning of disaster risk financing to be channeled through social protection platforms, hence potentially showcasing the cost-effectiveness of building an ASP system in Zambia.

The World Bank and UN agencies are actively supporting the GRZ in enhancing regular social protection programs and in complementing the GRZ's shock responses through the deployment of Emergency Cash Transfers (ECT). The recent shock responses have clearly underscored the need to invest in advancing the ASP agenda in Zambia as a means for the Government to be capable of rapidly deploying precise and time-bound responses to contrast the adverse impacts of the recurring shocks to which the country is growing progressively more prone. While UN agencies have supported the GRZ in deploying timely ECT to support shock-affected households through their own delivery systems, the World Bank has been versatile in mobilizing additional financing for the SCT sub-component of the GEWEL project to support the GRZ's response to the negative economic shocks caused by the COVID-19 pandemic. The timely support provided through the SCT has allowed for the provision of predictable cash transfers

across all 116 districts of the country, preventing vulnerable households from resorting to the adoption of negative coping mechanisms.[49]

The United Nations Sustainable Development Cooperation Framework (UNSDCF) 2023–27 is a recent document that renews the support of the UN to the GRZ to achieve the Sustainable Development Goal (SDG) Agenda in the remaining years of the 'decade of action'. Working towards universal social protection coverage in Zambia is under UNSDCF Strategic Priority 1: Prosperity, thus underscoring the need to link protective social safety nets with productive opportunities that can stimulate economic growth and higher resilience capacity. The Theory of Change (ToC) of this Strategic Priority also underpins the need to integrate shock-responsive elements in existing social protection systems, especially in light of the tangible repercussions of climate change.[50]

Significant efforts are being carried out to address the macroeconomic challenges that constrain the creation of fiscal space to finance social protection. The GRZ currently spends 0.8 percent of its gross domestic product (GDP) (equal to 2.4 percent of the national budget) on social assistance. Both the World Bank and a number of UN agencies have been collaborating closely with the GRZ to devise strategies to expand fiscal space and generate revenues to support Zambia's aspirations for universal social protection, as highlighted in its strategic development documents. For instance, the Integrated National Financing Framework (INFF) developed by the UN Joint Programme financed by the SDG Fund, among other objectives, aims at improving and expanding fiscal space for the achievement of SDGs (including social protection programs) through enhanced revenue mobilization and budgetary efficiency measures.[51]

5.3. Interactions with Disaster Risk Management (DRM)

DRM in Zambia is regulated by the National DRM Policy of 2005, the DRM Act Number 13 of 2010, and the Zambia DRM Framework (2017–30). The GRZ agency mandated with leading DRM and mitigation efforts in Zambia is the Disaster Management and Mitigation Unit (DMMU), which was established in 1994 as a permanent statutory Government agency and is housed under the Office of the Vice President. The DMMU carries out its mandate through the National Disaster Management Council of Ministers, the Disaster Management Technical Committee of Permanent Secretaries, and other decentralized 'satellite' technical committees at sub-national level.[52]

The capacity of the DMMU has been growing steadily over the past decade, both at technical and operational levels. Thanks to the technical support received from donors and non-State actors such as the World Bank, USAID, and UN agencies, DMMU's technical capacity of

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49 **World Bank. (2021b).** Zambia – Second Additional Financing for the Girls' Education and Women's Empowerment and Livelihood Project – COVID 19 Scale-up of Social Cash. **(P175955).** Project Paper.

50 United Nations. (2022). United Nations Sustainable Development Cooperation Framework for the Republic of Zambia 2023–2027.

51 United Nations MPTF Office Partners Gateway. (2022). FC1 2020 Zambia – Joint SDG Fund.

52 Government of Republic of Zambia. (2022). Disaster Management and Mitigation Unit (DMMU) Website.

forecasting the impact of any covariate shock has been steadily increasing. The DMMU, within the multi-stakeholder frameworks of the Zambian Vulnerability Assessment Committee (ZVAC) and the Food Security Cluster (FSC) co-chaired by the UN, carries out vulnerability risk assessments *vis-à-vis* the major covariate shocks to which Zambia is prone, ranging from droughts, to floods, and pest infestations. The DMMU also collaborates closely with the Zambian Meteorological Department (ZMD)[53] for the forecasting of hydro-meteorological shocks, the Ministry of Agriculture (MoA) for pest infestations, and the Ministry of Health (MoH) within the framework of the epidemic committees that monitor the potential outbreak of human diseases.[54] DMMU, in collaboration with non-State partners, develops annual needs assessments against droughts and floods.

At operational level, the DMMU has vast experience deploying in-kind (food) distributions to assist shock-affected households and has also introduced cash and vouchers during the 2014–15 and 2019–20 droughts with encouraging results, although the MCDSS is the mandated ministry for the deployment of ECT. The results are documented in the Livelihood Impacts of Cash Assessment, which were developed due to rigorous monitoring carried out during and after the cash distributions. Despite such long-lasting experience, it is clear how the creation of institutionalized linkages between DRM and social protection systems would allow for a quicker deployment of shock responses in times of crisis through cash interventions.

The DMMU is well-placed to continue developing a centralized Early Warning System (EWS) for Zambia. Thanks to the collaboration with the ZMD and the introduction of the Africa Risk View (ARV) tool,[55] the DMMU has been carrying out considerable work on modeling the various aspects of drought, such as identification and prediction of its severity and duration. In this regard, the southern half of Zambia is covered by the ARV, while the northern half is covered by ZMD. As far as floods are concerned, the DMMU has been using the Global Flood Awareness System (GloFAS), which helps provide information on on-going and upcoming flood events based on models and satellite information (numerical weather prediction forecasts). Based on recent consultations with the DMMU, it is important to grant financial stability to EWS initiatives in Zambia as a means to ensure coherence among the various components, and to continue building institutional capacity. Data scientists working on EWS in Zambia are from the Ministries of Agriculture, Health, and Finance and National Planning. The development of Government contingency plans informed by EWS data still significantly depends on external support received by non-State partners such as WFP and FAO.

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53 The ZMD is housed under the Ministry of Transport and Communications and is the authority for weather and climate services in Zambia.

54 Consultations with DMMU (2022).

55 The ARV is a tool developed by the African Risk Capacity (ARC) that combines satellite and population vulnerability data to monitor food insecurity and estimate potential shock response costs.

Figure 20: *Flood Forecasting System used in GloFAS (Source: European Commission, 2023)[56]*

Medium range deterministic forecasts HRES	Medium and extended range ensemble forecasts ENS	Long range ensemble forecasts SEASS
Atmospheric Model	Atmospheric Model	Atmospheric Model
Wave Model	Wave Model	Wave Model
Ocean Model	Ocean Model	Ocean Model
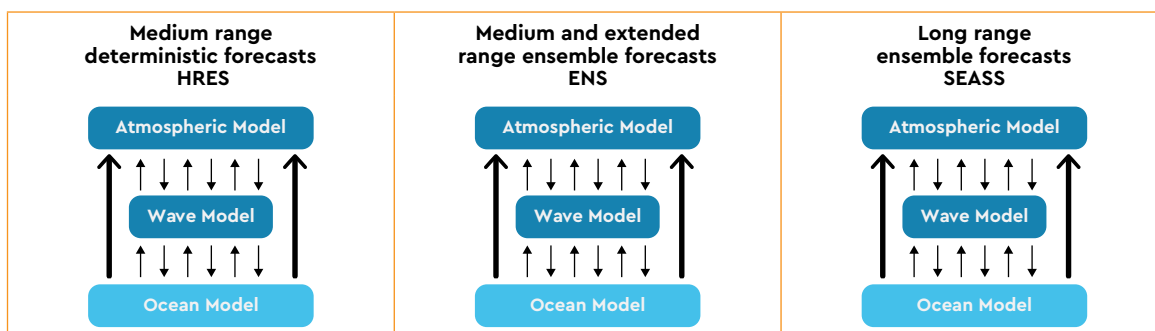
The recent covariate shocks that have affected Zambia have strengthened the interactions between the DMMU and MCDSS within the framework of disaster relief efforts. While Zambia currently lacks institutionalized linkages between DRM and social protection systems, the recent shock responses have shown the importance of intensifying efforts at this crucial nexus. The 'one-government' approach to the 2019–20 drought response shed light on the importance of formal institutional linkages between the two functions. In this regard, the DMMU carried out rapid assessments that determined the impacts of the covariate shock at provincial level, while the MCDSS deployed cash responses to prevent shock-affected households from falling into acute poverty. It is worth mentioning that in July 2022, the DMMU was considering channeling the 2019–20 Africa Risk Capacity (ARC) insurance payouts to drought-affected families through SCT systems.

Linkages between DRM and social protection functions can improve coordination and quality of shock responses in Zambia. The DMMU does not rely on a dedicated Management Information System (MIS) for disaster relief efforts but can help inform disaster relief efforts through empirical assessments and EWS functions, while the MCDSS can help channel responses through its social protection platforms. In light of such respective strengths, and in line with the ASP Agenda, it is important to formalize such synergies at the policy level. In this regard, the major features to be included in the upcoming DRM policy range from the linkages with social protection, to the regulation of insurance payouts, and longer-term recovery and relief efforts in shock-affected areas.

5.4. Existing government and non-government led social protection programs

Zambia has a long tradition of social protection program implementation, dating back to the 1960s. Reducing poverty through the provision of social safety nets has always been a priority and a social responsibility in Zambia, as shown by the introduction of the Public Welfare Assistance Scheme (PWAS) in the 1960s; it has progressively gained more importance in the past two decades due to the ever-widening urban-rural divide. Remarkable progress has been carried

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56 European Commission. Copernicus Emergency Management Service (CEMS). (2023). Global Food Awareness System (GloFAS). Official Website.

out by the GRZ, in collaboration with its development partners, in devising and refining the SCT program, which is a robust protective social safety net with coverage in the order of 27 percent of the Zambian population. However, many of the other social protection programs are fragmented in nature and have lower coverage rates due to tighter budget envelopes. Moreover, according to recent estimates, due to the low execution rates and funding shortfalls, only 2.3 million people receive regular benefits from social assistance programs.[57]

The World Bank has significantly increased its investment in the social protection sector in Zambia, assisting the GRZ in devising well-sequenced social safety nets for the most vulnerable segments of society. The World Bank is well placed to continue assisting the GRZ in enhancing its social protection systems at multiple levels. While the GEWEL project has laid the foundation for formalized linkages between protective social safety nets and productive opportunities, especially for vulnerable groups, the COVID-19 pandemic has underscored the importance of enhancing the adaptiveness of Zambia's social protection systems in view of mitigating the sweeping impacts of potential future covariate shocks.

Worldwide evidence shows the importance of social registries to include vulnerable and shock-vulnerable households in social protection programs. The results of the Stress Test tool (see Chapter 3) have clearly underscored the need for the GRZ to build on the momentum gained through the roll-out of innovative MIS solutions, such as the Zambia Integrated Social Protection Information System (ZISPIS), to invest in a social registry that can quickly identify shock-affected and shock-vulnerable households. Considering the dynamicity of poverty, it is crucial to invest in dynamic platforms that can better capture the evolving needs of the populations, extending access to complementary services that go beyond social assistance.

5.4.1. Social Cash Transfers (SCT)

Launched in 2003 as a small-scale pilot, the SCT has gradually become the GRZ's flagship social protection program over the past two decades. Thanks to the encouraging recorded impacts of the program on food security, nutrition, and human development of targeted households (see Box 3),[58] the GRZ has invested in expanding the SCT's coverage and in strengthening the social protection infrastructure to support this ambitious protective social safety net intervention. While there are issues related to fiscal space and *actual vs planned* beneficiaries, the expansion of the beneficiary caseload has increased from 250,000 beneficiary households in 2015 to 973,323 households in 2022. Beneficiaries of the SCT program are entitled to 200 kwacha (equivalent to about USD 12) per month, transferred on a bi-monthly basis without having to fulfill any conditionality, while beneficiaries living with disability receive double the amount. The cash transfers are delivered through direct cash handouts, while mobile network and bank transfer payments are being piloted in urban areas for national roll-out.

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57 World Bank. (2021c). Op. Cit.

58 Handa, Sudhanshu et al. (2016). "The Social and Productive Impacts of Zambia's Child Grant". Journal of Policy Analysis and Management 35 (2); and Handa, Sudhanshu et al. (2018). "Can unconditional cash transfers raise long-term living standards? Evidence from Zambia". Journal of Development Economics 133.

Box 3: The positive impacts of SCT on Household Welfare

Worldwide evidence supports the thesis that social assistance programs, if well-targeted, can effectively act as socio-economic vectors and contribute to countries' aspirations for longer-term prosperity. With respect to Zambia's SCT, the results of a 2014 impact evaluation of the SCT have shed light on the positive impacts of the program on its targeted beneficiaries at multiple levels. The diagram below summarizes some of the 2014 evaluation findings.
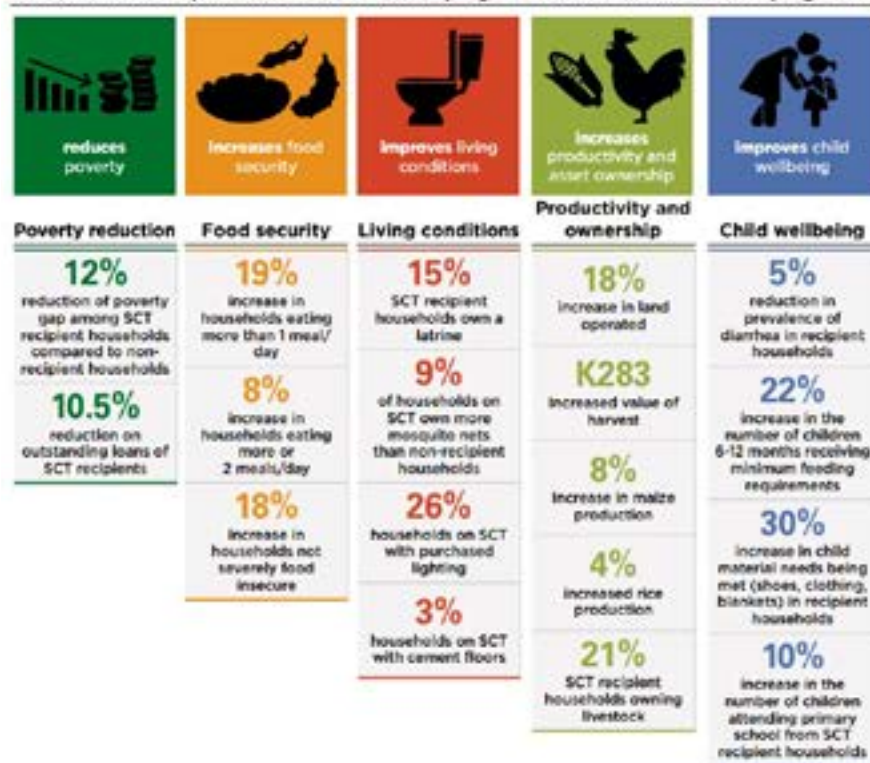
Source: MCDSS, 2022

Figure 21: The Expansion of the SCT Household Coverage between 2015 and 2022 (Source: Authors' calculations based on consultations with MCDSS)
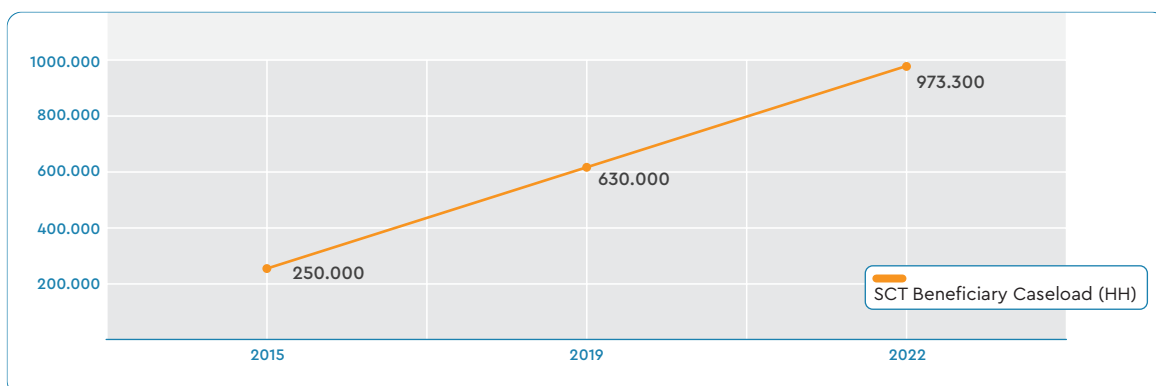
Through the provision of unconditional cash transfers to poor and vulnerable households,[59] the SCT program aims to smooth consumption at household level, contribute to improved education and health outcomes, and stimulate productivity. Under the leadership of the GRZ via the MCDSS and with the financial support of development partners, the SCT has proven to be the most suitable social protection program for shock responses, given its extensive coverage and developing associated supporting infrastructure. During the two most recent covariate shocks that have occurred in Zambia (the 2019 drought and the COVID-19 pandemic), the World Bank (through additional financing to the SCT component of the GEWEL project) and the UN have piggybacked on existing SCT delivery infrastructure to channel shock responses, highlighting the program's potential for scalability. The MCDSS, supported by the World Bank and others, has been scoping the potential to integrate productive components into the SCT (especially through cash plus approaches) as a means to provide beneficiaries with more tailored and transformative support, especially in light of the country's structural vulnerabilities, which include high youth unemployment rates and low levels of access to productive opportunities, particularly in rural areas.

The World Bank-financed SSRSP Project helps to stabilize financing for the social protection sector and lay the foundation for the integration of a shock-responsive element into the SCT program. Considering Zambia's fiscal and economic constraints that can hinder the deployment of financing for social protection programs, the World Bank is supporting the GRZ in financing its SCT program for a whole year within the framework of the newly approved SSRSP Project. Through improvements across the social protection delivery chain, combined with a limited budget envelope for potential horizontal and vertical expansions, the SSRSP Project aims at showcasing the value added of providing sustained and predictive assistance to vulnerable households, as well as laying the foundation for future intensified investments around ASP.

Thanks to the SSRSP Project and other recent investments, the SCT program is currently undergoing a digital transformation, which will allow for more versatile scalability in times of shock. Through the roll-out of the second iteration of the ZISPIS, it is expected that the inter-operability and portability of benefits of the various existing social protection programs in Zambia will be significantly increased. While the existing dedicated SCT program's MIS has significantly improved compared to its past iterations, especially as far as beneficiary deduplication and user friendliness, numerous data synchronization-related issues have been flagged. The roll-out of the second iteration of ZISPIS will allow for the real-time synchronization of beneficiary data as well as facilitate the rapid application of proxy means testing (PMT) for new beneficiaries, with a view to timely potential horizontal expansions.

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59 People with high dependency ratios in Zambia include chronically vulnerable and labor-constrained households such as persons living with disability, the elderly, the chronically ill, and female/child-headed households.

5.4.2. Girls' Education and Women's Empowerment and Livelihood (GEWEL) Project

Girls' Education and Women's Empowerment and Livelihood (GEWEL) is a World Bank-funded project implemented by the GRZ via the MCDSS and supported by a number of bilateral donors. The project was launched in 2016 thanks to IDA funding for a total of USD 65 million, and two additional financings were processed in 2020 and 2021 through the Multi-Donor Trust Fund (MDTF) adminstered by the World Bank. Other financial contributors to the fund include SIDA, FCDO, and Irish Aid. Through the provision of cash transfers via SCT, layered with livelihood support interventions, the program aims at empowering girls and women, especially by promoting school-aged girls' access to secondary education, and by fostering linkages between vulnerable women and productive opportunities. The GEWEL project has four key components: Keeping Girls in School (KGS), Supporting Women's Livelihoods (SWL), Social Cash Transfers (SCT), and Institutional Strengthening.

By linking cash assistance provided by the SCT with livelihood support measures provided by KGS and SWL, the productive impacts of social safety net programming are being significantly increased in Zambia. Building a system encompassing a multi-layered set of integrated interventions is the key to the eradication of intergenerational poverty traps across Zambia. Such an approach is based on the principle that socio-economic empowerment and human capital accumulation for destitute girls and women can only be achieved through sequenced programming that considers the multi-dimensional features of poverty, which are periodically compounded by recurring covariate shocks. Empowerment interventions, such as SWL, help vulnerable households build resilience over time.

The KGS, relying on SCT data, is a bursary program that aims at building human capital for the next generation, which is expected to translate into increases in future earnings for women. Early assessments of the KGS show that the program is reducing financial barriers to school enrollment and supporting continued attendance, thus increasing the hope for a better future. Considering the vast needs of school-aged girls in rural Zambia, the program would benefit from an increase in coverage, which could also be extended to households that are not eligible for the SCT program. The KGS program is implemented by the Ministry of General Education, in direct collaboration with the MCDSS and other relevant stakeholders.

The SWL program is based on a graduation model that provides extremely vulnerable women with productive opportunities that can sustain their socio-economic empowerment. The SWL provides a livelihood support package encompassing the creation of savings groups that can support the culture of saving; intensive trainings on a wide range of subjects applying a gender-sensitive lens; productivity grants delivered through government-to-person (G2P) payment mechanisms; as well as mentoring and follow-up support. This Cash Plus approach is expected to reach up to 130,000 beneficiaries by 2024 across 81 districts of Zambia.[60]

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60 Government of Republic of Zambia. MCDSS. (2021b). Girls' Education and Women's Empowerment and Livelihoods Project (GEWEL). MCDSS Website.

5.4.3. Other Programs

Other noteworthy social protection programs comprise the Public Welfare Assistance Scheme (PWAS), the Food Security Pack (FSP) program, and the Home-Grown School Meals (HGSM) program. Dating back to 1964, PWAS is the country's oldest social safety net program that targets the extremely vulnerable, orphans, the disabled, and vulnerable female-headed households. Based on consultations with MCDSS, the beneficiary caseload of PWAS for 2021 was in the order of 200,000 people, although the figure varies year by year due to lack of stable funding. Since the inception of the SCT in 2003, most of the social protection attention and efforts of the GRZ have shifted away from the PWAS, as shown by its 2018 yearly budget (Kwacha 16 million), which is equivalent to only 2.2 percent of the SCT's budget for the same year. In light of the growing robustness of the SCT program, the PWAS is currently undergoing project re-purposing as a means to remain relevant and act as a complementary set of basic services for marginalized groups of society (e.g., referrals, school fee waivers, etc.). To this effect, the program is currently converting its paper-based beneficiary data to a digitalized MIS, which could potentially be managed by the overarching ZISPIS system, as well as enhancing its case management system at community levels, which enables the MCDSS to provide its PWAS beneficiaries with assistance that is better tailored to their specific needs.

The Orphans and Vulnerable Children Bursaries and Scholarships program (OVC), which is a component of the PWAS, was launched in the 1990s and currently provides in-kind social support to a limited beneficiary caseload. The program has both statutory and non-statutory components and benefits from an MIS, which allows for improved beneficiary case management. Moreover, synergies were created during the pandemic between the COVID-19 ECT shock response and the OVC program to ensure that its beneficiary caseload received assistance during that difficult period.

The FSP is a social safety net program that was launched over two decades ago by the GRZ to provide vulnerable farmer households with livelihood support packages. Through the provision of agricultural inputs and training opportunities, the FSP aims at improving the productivity levels of vulnerable farmer households across all 116 districts of Zambia, with subsequent impacts on their socio-economic welfare. By encouraging the culture of savings and asset development, households are enabled to become self-reliant and break the vicious cycle of intergenerational poverty traps. Based on a 'payback' model, FSP provides for 10 percent of all assistance recoveries, which are then pooled into community revolving funds to be drawn upon for food security-related initiatives. The FSP provides differentiated support as per its three components: Rainfed Cropping, Wetland Cropping, and the Alternative Livelihood Initiative (ALI).[61]

The HGSM program aims at providing an in-kind social safety net to school-aged children while at the same time supporting local smallholder farmers' production. By providing one hot meal per day to pre-primary and primary school-aged children as part of its social assistance

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61   Government of Republic of Zambia. MCDSS. (2021a). Food Security Pack (FSP) Programme. MCDSS Website.

component, the HGSM aims at increasing school enrolment rates, attendance, and retention for improved human capital outcomes. The program targeted over 1.2 million school-aged children across all 116 districts of the country and was planned to be scaled up to 2 million by 2020. However, significant funding gaps have hindered such a scale-up, and the GRZ still relies on external support to ensure the program's continuity. To this effect, it is essential for the GRZ to continue creating fiscal space to finance HGSM, which has proven to have multiple positive impacts on human capital development as well as food security and nutrition. On the other hand, the productive component of the HGSM has not had the same level of impact as the social assistance one – due primarily to the inefficiencies of the local farm market.[62]

A number of pilots and initiatives are being planned for roll-out in Zambia, piggybacking on the existing SCT social protection infrastructure and coverage. For instance, MCDSS in collaboration with UNICEF and WFP is launching the 1000 Days Nutrition Support pilot program which piggybacks on the existing SCT program platforms with the objective of preventing malnutrition through the provision of cash transfers to households with pregnant and lactating women and with children under 2 years of age. The cash transfers are complemented by Social and Behavior Change Communication (SBCC) and family support services, thus providing beneficiaries with a comprehensive nutrition package.[63]

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62   World Bank. (2021c). Op. Cit.

63   Consultations with UNICEF Zambia.

CHAPTER 6. Stress Tool Part 2 – Assessing scalability and adaptiveness of Social Protection in Zambia

6.1. Framework and approach

Based on the results of Module 2 of the Stress Test Tool, the level of adaptivity of Zambia's current social protection system has been rated as 'nascent' as shown in the table below, but the proximity to the 'emerging' classification highlights the great progress achieved by the GRZ in developing nationally owned social protection systems over the past decades. A summary of the rationale behind the results of the Stress Test is provided for each of the four building blocks.

Table 2:   Breakdown of Stress Test Scores by Building Block

Building block	Sub-component	Number of questions	building block score	Scoring				
				Latent (1)	Nascent (2)	Emerging (3)	Established (4)	Advanced (5)
Programs and delivery systems	Programs	4	2.9			x		
	Delivery systems	7			x			
	Payment mechanism	3			x			
Data and information	Early Warning Systems	4	2.9			x		
	Social registries	9			x			
Financing		4	2.3		x			
Institutional arrangements	Government leadership	3	2.6		x			
	Institutions	2			x			
Total questions		36						
Average score				(14×2.9+13×2.9+4×2.3+5×2.6) / (14+13+4+5) ≈ 2.8				
Equivalent level				Nascent				

6.2. Building Block 1 – Programs and Delivery/Payment Systems – Score: 2.93/5

This building block is comprised of questions related to programmatic, delivery systems and payment mechanism aspects of the existing social protection-affiliated initiatives in Zambia.

Programs – Score: 3/5: Thanks to the country's long-lasting tradition of social assistance schemes, combined with recent intensified investments around social protection infrastructure strengthening and programming, 'Programs' is Zambia's highest rated ASP building block.

Based on Zambia's social protection system's appraisal from an ASP perspective, the GRZ in fact runs relevant programs at national scale with enough coverage to positively impact resilience-building.

» The various national-scale programs run by the GRZ range from unconditional social cash transfers to bursary programs such as KGS and OVC, and social protection-affiliated schemes such as HGSM. The programs supported under the GEWEL project are allowing for the successful integration of a productive component to the SCT with a strong gender-sensitive lens. Despite the tremendous progress achieved over the past years as far as strengthening social protection programs (especially the SCT), there are many issues that need to be solved, ranging from low delivery rates to significant coverage gaps in vulnerable districts, particularly for the KGS and SWL sub-components of the GEWEL project.

» Since most of the focus has shifted over the years from PWAS and OVC to the SCT program, there is the need to create stronger linkages between such programs to prevent funding shortfalls over the years and to avoid duplication of efforts given the overlapping programmatic objectives.

» The coverage of social protection programs in Zambia is in the order of 33 percent of the population, 27 percent of which are covered by the SCT program. However, unpredictable levels of funding, combined with technical constraints of delivery systems, have created discrepancies between planned and actual beneficiaries. Thanks to the support provided by development partners, *inter alia* the World Bank, financing levels have been stabilized in recent years, but there is still the need to ensure committed, predictable, and reliable government financing in order to grant sustainability and impact of social protection programs in the mid- to long-term.

» While the SCT program is highly compatible for shock responses, given its vast coverage across the country and its associated platforms (whose systems' robustness and outreach have been growing), the program still formally lacks a shock-responsive element. Based on the recent COVID-19 response, the benefit amount for such a shock response was equivalent to only a half ration of the food basket. The development of SOPs to be followed in times of shocks can allow for the provision of benefits that fully compensate for potential consumption impact.

» The benefit adequacy of the SCT program needs to be assessed on a rolling basis, especially due to inflation caused by the recurring macroeconomic shocks.

» Programs such as the SCT could benefit from the integration of clearer graduation pathways. Developments at systems level for enhanced case management and the expansion of new initiatives such as the Single Window Initiative can help beneficiaries transition from unconditional cash transfers to other complementary social protection measures they might require.

Delivery Systems – Score: 2.86/5: Despite the lack of formal shock-responsive elements, the 2019–20 drought and the more recent COVID-19 shock response have shed light on the current capacity of existing delivery systems to support the prompt deployment of shock responses. The delivery systems for social protection in Zambia generally need to be developed further for higher levels of accountability and to accrue legitimacy of GRZ-led responses *vis-à-vis* its citizens. Based on consultations with various government and non-government actors, this sub-component of the Programs and Delivery Systems building block has been rated as 'emerging' (3/5).

» The assessment has highlighted the existence of communication mechanisms that can be leveraged in times of shock to disseminate relevant information to beneficiaries at community level. While there has not been a formal assessment to determine which communications strategy is more effective in times of shock, the GRZ has been using mass media channels such as radio, television, SMS push notifications, as well as sensitizing community leaders on a number of social protection-related issues. It is worth mentioning that the 'communications' module of the second iteration of the ZISPIS will manage all telematic communications to beneficiaries, with various modules for different programs.

» While the SCT currently lacks a shock-responsive element, nonetheless during the COVID-19 response it was observed how beneficiaries were able to carry out self-enrollment in person at government helpdesks thanks to prior sensitization on the value of 'pull-registration'. The reliance on external support to deploy timely shock responses demonstrates the need to continue investing in enhancing the adaptiveness of social protection delivery systems in order to facilitate smooth scale-ups in times of shock.

» With respect to Grievance Redress Mechanisms (GRM), beneficiaries and non-beneficiaries alike can file their complaints and feedback, although the case management system for such complaints is still in the process of being further refined. The World Bank has supported the GRZ in prioritizing gender-based violence (GBV)-related incidents registered through the GRM, given that appointing women as assistance recipients can often lead to intra-household tensions. Further investments and efforts to improve the GRM for all social protection programs are in the pipeline.

» Efforts have been made to ensure access of women and vulnerable groups to social protection assistance, especially in times of shock, for instance through the provision of specific certificates to people living with disabilities. Working towards the interoperability between the OVC and the SCT programs' databases could help reduce the risk of effort duplication.

Payment Mechanism – Score: 2.7/5: The assessment underscored some of the difficulties that the current system has experienced, especially in expanding horizontally to assist new shock-affected households. It is worth noting that the assessment might yield different results if carried out in the first quarter of 2023, due to the digital transformation that the MCDSS is undertaking, and which is expected to benefit potential future shock responses.

» Currently, fully digital SCT payments are being carried out in only two pilot districts, while the remaining 114 districts are still using a manual payment system. However, this proportion is expected to rapidly change due to the recent governmental authorization to deploy the digital system countrywide. In remote areas, with no network connectivity or Payment Service Provider (PSP) presence, physical cash payments will continue to be made by civil servant Pay Point Managers (PPMs) but with almost real time payment tracking and strengthened beneficiary authentication through a new PPM android application (App). In areas with network connectivity and PSP presence, digital payments will be rolled out through banks and mobile money operators. Moderate delays have been observed during the COVID-19 response for the social protection system to expand vertically, but they are mostly due to coordination-related issues rather than system capability.

» Serious delays have been reported as far as horizontal expansions due to both coordination and system-related issues. Intensifying efforts to address such a crucial issue can allow for the timely deployment of relief support to those households which have become vulnerable as the result of a covariate shock.

» While mobile cash transfers have been identified as the most reliable transfer modality, many technical issues need to be addressed, including the provision of individual SIM cards, the lack of mobile phones,[64] data inaccuracies, duplicate National Registration Card (NRC) numbers, limited capacity of district staff on digital payments, and the impossibility of choosing a digital PSP in very remote areas. The roll-out of digital payments through banks and Mobile Network Operators (MNO) will therefore be implemented gradually in a few districts at a time.

» The difficulties encountered in channeling shock responses through existing payment mechanisms in a timely manner have led to the GRZ relying partially on external support via ECTs during the 2019–20 drought and COVID-19 responses.

6.3. Building Block 2 – Data and Information – Score: 2.9/5

The level of availability of high-quality early warning data and the quality of existing registries or databases that could be capitalized upon for beneficiary targeting in the event of a shock have been reviewed. The overall rating for this building block is 'nascent', and the on-going and upcoming efforts in this domain demonstrate a general acknowledgement of the current gaps and fragmentation of the various existing 'pieces', and a strong willingness to address such issues. In this regard, while the country's current weather, hydro-meteorological, and EWS are fragmented and not used systematically to inform shock responses, government agencies have been developing their climate forecasting capacity over the past years, although access to

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64 Due to the pandemic, over 300,000 mobile phones were purchased for SCT beneficiaries. (Source: World Bank. (2021a). Op. cit.)

real-time data is still limited. In the absence of a national social registry, government and non-State partners have relied mostly on project-dedicated databases: it is essential to consider investing in such dynamic platforms for more precise and timely shock responses.

Early Warning Systems – Score: 3/5: The assessment shed light on the significant progress achieved by the GRZ in the past years in working towards a centralized EWS that can help inform the onset of both rapid and slow onset covariate shocks. It is crucial to ensure financial stability for EWS in Zambia and to continue building the GRZ's in-house capacity in order to rely to a lesser extent on external support. The assessment has highlighted both the increasing capacity of the Zambian EWS components to monitor droughts and floods, as well as the limitations in data quality and timeliness. Developing technical capacity in the utilization of remote sensing, modeling, Geographic Information Systems (GIS), and the standardization of risk layers for vulnerability risk assessments has been identified as a priority for the DMMU. Given the severe repercussions of macroeconomic shocks on poverty, it is opportune to explore linkages between econometric analyses carried out by the Ministry of Finance and National Planning (MoFNP) and EWS in order to enhance preparedness *vis-à-vis* potential future macroeconomic shocks. Accessing such data could benefit social protection programs, for instance by informing the review of benefit adequacy in both normal times and during shocks.

» There are functioning EWS elements in Zambia, but mostly for droughts and floods. Despite the lack of a centralized EWS, DMMU is being supported by non-State actors such as FAO and WFP in carrying out monitoring and alerting, although the capability to monitor more infrequent shocks is still limited.

» The GRZ periodically carries out assessments to determine the impacts of shocks on populations, with support from the Zambia Vulnerability Assessment Committee (ZVAC), which is co-chaired by the UN, and the EWS Consortium. However, its in-house capacity still requires further strengthening to grant sustainability to these crucial efforts.

» While Zambia currently lacks objective pre-agreed triggers that can inform the scale-up of social protection systems, there have been active efforts to introduce them in the country, especially with respect to droughts and floods. However, the lack of predictive earmarked disaster relief financing to be released based on EWS data still hinders the development of objective triggers.

» The available EWS data was deemed to be sufficient to carry out geographic targeting for social protection programs.

Registry – Score: 2.8/5: The Stress Test highlighted the existence of a number of project-specific MIS in Zambia which are likely to be harmonized and made interoperable in the future through the upcoming roll-out of the second iteration of the ZISPIS system. ZISPIS, however, currently remains an SCT-specific MIS system; substantial IT work is necessary to insert a Single Registry functionality within it so that it can store data on beneficiaries from other social protection programs.

» During the COVID-19 response, the SCT MIS was utilized to generate payment lists for the deployment of ECTs through stand-alone non-government payment systems, hence demonstrating the reliability of the system. The data collected in the SCT MIS is in fact sufficient to target shock-affected households, although planned new developments including geotagging and updated beneficiary phone numbers are expected to significantly facilitate such processes in times of shock.

» While the second iteration of the ZISPIS will allow for a unified delivery system for social protection, it will not hold beneficiary-level data. In this regard, the development of a national social registry is a priority for social protection and could be achieved by building on the SCT program's immense beneficiary database (over 30 percent of the population) which covers beneficiaries across all districts of Zambia.[65]

» While the SCT program's database serves as a good starting point for the development of a social registry, the existing protocols for updating its records need to be followed thoroughly (63 percent of all beneficiary records are older than 3 years). The presence of robust data privacy regulations in Zambia and the experience accrued in making databases interoperable due to data-sharing pre-agreements serve as a solid foundation for such efforts.

6.4. Building Block 3 – Finance – Score: 2.3/5

The 'Finance' building block of the ASP framework in Zambia has been rated the lowest. Fiscal space constraints resulting from debilitating macroeconomic difficulties, combined with the lack of a disaster risk financing policy linked with social protection systems, are among the reasons behind such a low rating. However, the GRZ, in collaboration with international partners such as the World Bank, is well placed to advance this crucial pillar of the ASP agenda and adopt context-specific disaster finance instruments, especially in light of the delays in mobilizing resources for disaster relief during the two most recent large-scale shock responses in Zambia.

» There are clear policy gaps that need to be addressed with respect to disaster risk financing and social protection systems – the upcoming review of the DRM policy is a pertinent opportunity to foster such crucial linkages, whose value-added has been observed during the COVID-19 response.

» The capacity of the GRZ to quantify potential financial implications of droughts and floods has been steadily increasing, as highlighted in the contingency and preparedness plans developed by the DMMU in collaboration with MoFNP. While there is not yet a formal linkage between such plans and social protection programs, there are on-going discussions on strategies to carve a more prominent role for social protection within the framework of disaster relief support.

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65 As of August 2022, the SCT database held records of 917,926 households, 98 percent of which reside in rural areas. (Source: Consultations with MCDSS, 2022.)

» Zambia currently lacks disaster financing instruments that are earmarked for social protection – linkages with social protection actors and non-State partners have mostly occurred on an *ad hoc* and post-disaster basis. This reactive approach has resulted in moderate to severe delays in deploying assistance to shock-affected households.

» Based on recent consultations, DMMU and MoFNP are currently in the process of developing a disaster risk financing strategy that aims at laying the foundation for early financing mechanisms linked with early action.

6.5. Building Block 4 – Institutions and Partnerships – Score: 2.6/5

According to the Stress Test results, Institutions and Partnerships for ASP are still at a 'nascent' stage in Zambia, although with great potential for improvement in the short- to mid-term. Establishing sound *ex ante* institutional arrangements for DRM and social protection is a pre-requisite for the advancement of the ASP agenda in Zambia. The delays observed during the COVID-19 response could have in part been avoided with pre-agreed institutional arrange-ments and partnerships encompassing clear roles and responsibilities for government and non-government partners alike. Furthermore, addressing the existing policy gap between DRM functions and social protection systems would allow for the development of more realistic and effective contingency plans with clear and actionable roadmaps for implementation.

Government Leadership – Score: 2.7/5: The role of social protection in disaster risk manage-ment is still not formally recognized in Zambia at policy level, but rather on a *de facto* basis given the prominent operational role of SP in both the recent drought and COVID-19 responses. The strong government ownership and leadership around both social protection and DRM in Zambia provide a strong foundation for the strengthening of such crucial functions for future shock responses in the country.

» The Government has both contingency and disaster response plans developed by the DMMU in collaboration with other government partners as well as non-State actors such as UNICEF, WFP and FAO drawing on data produced by EWS. While contingency plans are developed against drought and flood every year, they do not always comprise clear implementation roadmaps that would guide their operationalization.

» It is essential for the DMMU and MCDSS to clearly articulate their roles and responsibilities *vis-à-vis* shock responses at policy level, and to foster a strong partnership with MoFNP to be prepared for potential macroeconomic shocks that might have sudden and dire repercussions on people's livelihoods.

» The role of non-State actors, UN agencies *inter alia*, has proven to be crucial in rapidly deploying shock responses through ECT – it is essential for the GRZ to gradually take the full lead in such efforts.

» In response to COVID-19, the GRZ developed a governmental response plan, while the UN launched an interagency appeal through the FSC and the social protection cluster. Government and non-governmental agencies still run parallel disaster relief responses in Zambia. However, the GRZ was able to exercise its convening power by bringing together all relevant stakeholders and building consensus around the parameters for the COVID-19 response.

Institutional Arrangements – Score: 2.5/5: The DMMU is the Government agency mandated with the coordination of all disaster relief efforts in Zambia, while the MCDSS is mandated with the coordination and implementation of all social protection efforts and shock responses deployed through cash transfers. It is essential for the upcoming social protection and DRM policies to clearly reflect and outline the synergies between these two functions, as well as determining the roles and responsibilities of non-State actors *vis-à-vis* potential future shocks. Given the delays observed during the drought and COVID-19 responses, it is important to address the fragmented nature of shock response coordination in Zambia, both at intergovernmental and non-State levels.

» Based on the review of past shock responses in Zambia, there is an urgent need to harmonize the coordination structure in view of potential future shocks. During the COVID-19 response, significant delays were experienced due to the need for all stakeholders to convene and agree on the parameters for shock response, ranging from transfer modality to value of entitlement, and targeting-related issues, which could be in part mitigated thanks to the development of a social registry.

» The development of SOPs envisaged by the World Bank-financed SSRSP project are expected to help determine the roles and responsibilities of all actors in times of shock, thus contributing to the development of a social protection system that can be considered 'responsive by design'.

» Intensifying investments around all pillars of the ASP framework can allow for the establishment of stronger institutional arrangements that can grant success to future Government-led shock responses in Zambia. Relying on *ad hoc* linkages between DRM, social protection, and humanitarian partners (e.g., the Cash Working Group and other inter-agency thematic clusters) can continue causing delays that have severe repercussions on shock-affected households' ability to recover from the sweeping impacts of covariate shocks.

6.6. Overall Scoring

The overall level of adaptiveness of Zambia's social protection system has been rated as 'nascent'. The progress achieved by the GRZ in enhancing its existing social protection system over the past decade paves the way for future intensified investments around ASP. A common understanding between the GRZ and non-State actors has been reached with respect to the need for shifting from a reactive to a proactive approach in managing covariate shocks in Zambia. The strong Government leadership and ownership around social protection in Zambia

will help in addressing some of the policy gaps that have emerged through this assessment, especially as far as working towards the creation of institutionalized linkages between DRM and social protection, which in turn can harmonize the coordination structure with non-State actors.

Figure 22: *Figure 22: Zambia's Social Protection System's Level of Adaptiveness (Source: Authors' own calculations)*
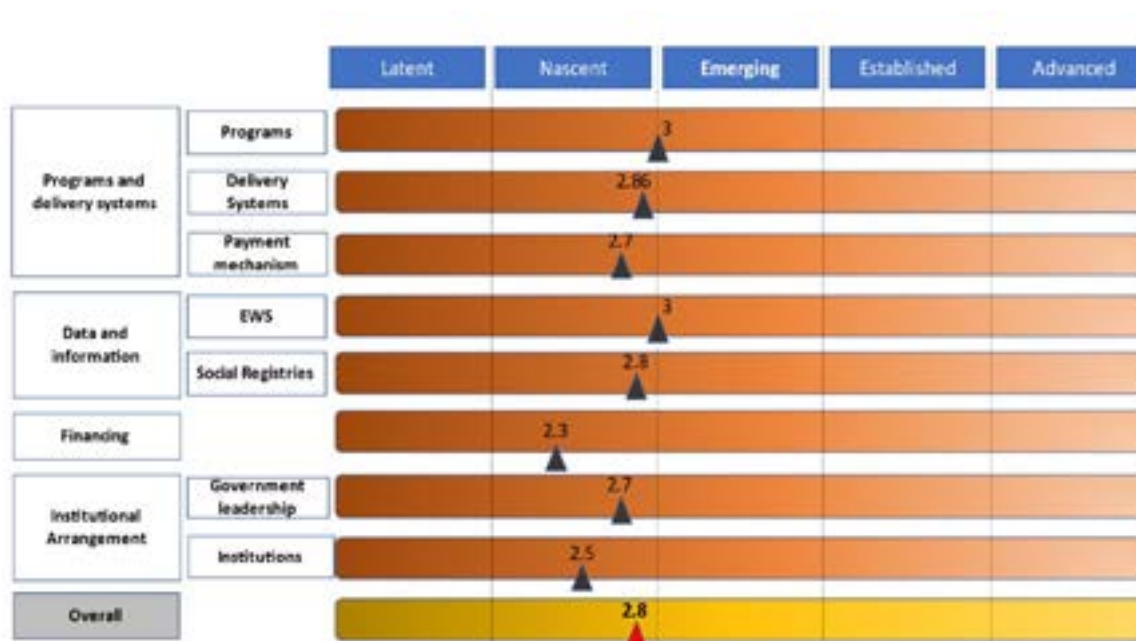
Investments in anticipatory action, specifically in enhancing hydro-meteorological services and linking early-warning data to decision-making, can help save lives as well as saving the country billions of dollars from the impacts of covariate shocks in the mid- to long-term. While it is crucial to address and alleviate poverty, especially in rural areas of the country, it is also important to actively build the resilience of vulnerable households and communities to be better equipped to cope with potential future shocks. Moreover, the development of a social registry can help coordinate efforts to reach households in need and facilitate synergies across the various programs implemented by GRZ.

The assessment has highlighted the urgent need for the integration of a shock-responsive element into the GRZ's flagship social protection program. It is essential to continue building on the investments of Government-owned infrastructure to enhance the versatility of the SCT program. The recent COVID-19 response has helped shed light on some of Zambia's short-comings in scaling-up its social protection program in times of shock, including: the frag-mented coordination in deploying assistance to shock-affected households; the lack of a social registry; the absence of a centralized EWS pegged to objective indicators that can support decision-making; and the lack of disaster risk financing instruments. On the other hand, it is expected that upcoming developments such as the launch of the second iteration of ZISPIS will strengthen and streamline MIS and payment systems, hence increasing the suitability of SCT for shock responses.

CHAPTER 7.   Recommendations and Conclusion

The high prevalence of vulnerability to poverty in Zambia highlights the need to strengthen social programs that promote access to higher education, health, and economic opportunities. At the national level, the results of the study reveal that two thirds of the population are either poor or at risk of becoming poor in the event of an adverse shock. Furthermore, vulnerability is not equally spread geographically, as populations in rural areas and less developed provinces are more vulnerable to poverty. In addition, the prevalence of vulnerability to poverty varies across various types of households, e.g., farm households and households with less stable streams of income are more likely to find themselves under the poverty line. These results support the case for the continuation of current programs that address the drivers of chronic poverty, such as the Social Cash Transfers, Food Security Pack, Supporting Women's Livelihoods, and Keeping Girls in School, as they seek to reduce poverty and vulnerability in Zambia by expanding their outreach and coverage. Moreover, the results also support the scale-up of new pilot programs, such as the '1000 Days' nutrition pilot project, which can help pave the way for the inclusion of complementary nutrition services in existing social protection programs in Zambia. Finally, investing in expanding the Single Window Initiative for social protection may be essential to enhance referral pathways for vulnerable households and communities in need of social assistance in Zambia.

In Zambia, vulnerability is mostly associated with low human and physical capital that determine low-income prospects (poverty-induced vulnerability); however, as the country develops, risk-induced vulnerability is expected to become more relevant. The findings presented in this study show that low endowments are the main driver of vulnerability to poverty in Zambia, primarily in poorer and less developed territories. However, the evidence also suggests that as territories develop and income grows, the role of risk starts to increase. This is both the case within the country, but also across countries. For programs to be effective, efforts need to be made to ensure that programs are developed not only based on the chronic correlates of poverty but also in consideration of potential adverse welfare impacts of shocks of various natures. Therefore, the findings highlight the need of transitioning to social protection systems that are adaptive and flexible to the changing circumstances, so that they can help offset the negative welfare effects of shocks by expanding benefits and services during crisis and scaling back in normal times.

The similar contributions of idiosyncratic and covariate shocks to risk-induced vulnerability in Zambia suggest that social protection programs need to address both sources of risks to increase resiliency. Idiosyncratic shocks are specific to households and can often be insured through formal and informal schemes, e.g., by risk sharing mechanisms within communities. However, these mechanisms are often not well developed, especially to address the needs of the most disadvantaged households. Idiosyncratic shocks do not require readily scalable

mechanisms in place to react quickly at a given point in time, but rather enabling policies that support the development of appropriate insurance mechanisms available to households. Covariate shocks, in contrast, affect all households within a community at the same time, and therefore are more difficult to insure against. It is these shocks in particular that should be addressed through appropriate expansions of social protection programs. Increased coverage in response to a shock can take the form of vertical expansion (i.e., increased support to existing beneficiaries), or horizontal expansion (i.e., increased caseload).

This study estimates that 58 percent of the Zambian population would require additional assistance, potentially through social protection, in the event of an average shock. Under the framework implemented in the empirical model of the analysis presented in this report, 52 percent of the population are vulnerable to poverty due to limited endowments, and another 6 percent are vulnerable to poverty due to covariate shocks. The need for support due to poverty-induced vulnerability is highest in Western, Eastern, Luapula, and Northern provinces – with over three quarters of the population falling under this category. The largest need for support in the event of a covariate shock is concentrated in the Central, North Western, and Luapula provinces, with 9 to 10 percent of the population classified as vulnerable to poverty due to the risk posed by covariate shocks. Across the whole country, about 1.15 million individuals are estimated to be vulnerable to poverty in the event of a covariate shock. Lastly, adopting a tighter or looser poverty threshold will affect the estimated size of the population in need of support under a typical crisis. For example, moving the poverty threshold between 40 and 60 percent results in an incidence of vulnerability to poverty between 59 and 67 percent, and a percentage of population in need of assistance between 55.8 and 60.6 percent. Therefore, the selection of the poverty threshold is ultimately a policy decision that may be guided by the country's development goals and resources.

As such, efforts should be directed at building a social protection system that allows for a systematic response in the event of shocks. The lack of pre-defined scalability mechanisms for social protection has impeded the deployment of well-coordinated responses to shocks through existing social protection programs such as the SCT. It is expected that the development of SOPs for the SCT will help in guiding potential future responses to shocks in Zambia. The findings of this study represent a first diagnostic that highlight the weaknesses of the current system, and it can thus contribute to the development of an integrated roadmap for necessary improvements in all four key building blocks of the ASP framework.

Lessons learned from past shock responses in Zambia need to be capitalized upon. The successes and shortcomings of past shock response initiatives need to be analyzed and utilized to inform the development of SOPs for social protection scale-up in Zambia. While the 2019–20 drought response serves as an apt case study to scrutinize the *ad hoc* and post-disaster nature of disaster relief response in Zambia, the delay in responding to COVID-19 has tested the shock responsiveness and absorption capacity of the SCT-related platforms. For instance, based on various reports and observations, the delay in launching the COVID-19 response highlighted the importance of shifting from a reactive to a proactive approach in managing crises and shocks in

the country. While the support of non-State actors in deploying ECT has been crucial in saving lives, the GRZ needs to continue investing in enhancing systems and mechanisms across the social protection delivery chain – a priority from an affordability and reliability standpoint.

Investing in the development of a national social registry can improve the accuracy and time-liness of shock responses channeled through social protection systems. Developing a single registry that complements other readily available targeting data sources could greatly support the shock response intake and registration processes. Carrying out pre-registration of house-holds in shock-vulnerable communities could allow for a rapid horizontal expansion in times of shock, while at the same time guaranteeing accuracy and priority to vulnerable populations (e.g., the elderly, people living with disabilities, etc.).

Given the importance of building resilience in normal years to mitigate the impact of disasters on households in shock years, it is imperative to strengthen linkages between various social protection programs and basic social services in Zambia in a cash 'plus' approach. The GRZ, with the support of the World Bank, has been successful in layering the productive component of SWL onto the SCT program within the framework of the GEWEL project. Given the vast needs across Zambia, it is important to continue working on expanding the outreach and coverage of the KGS and SWL projects in order to drive socio-economic empowerment of vulnerable women through a bottom-up approach. Moreover, the results of pilots such as the '1000 Days' need to be thoroughly analyzed as a means to pave the way for the inclusion of complemen-tary nutrition services in existing social protection programs in Zambia. Furthermore, investing in expanding the Single Window Initiative for social protection is essential to enhance referral pathways for vulnerable households and communities in need of social assistance in Zambia.

Ultimately, developing sustainable disaster risk financing solutions aligned with social pro-tection and DRM systems is an urgent priority that can minimize the negative impacts caused by shocks on people's lives and livelihoods. The World Bank is committed to supporting the GRZ in devising sustainable disaster risk financing solutions, including contingency financ-ing and market-based instruments, linked with existing DRM and social protection systems. Working towards early financing solutions can make social protection systems truly adaptive, enabling the GRZ to deploy timely and needs-based emergency responses in shock-affected communities.

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cy-analysis-and-research/)

Annexes

A.   Empirical methods

The multilevel model proposed by Skoufias and Baez (2021) is built upon the methodologies proposed by Chaudhuri (2003), Christiaensen and Subbarao (2005), and Gunther and Harttgen (2009),[66] and consists of a two-level hierarchical model that in the first stage decomposes of the prevalence of vulnerability to poverty into poverty-induced and risk-induced vulnerability, and in the second stage, assesses the relative contribution of idiosyncratic and covariate shocks to vulnerability. Specifically, this model relies on the assumption that vulnerability to poverty is characterized by the mean and variance of households' welfare. Therefore, welfare is modelled as being determined by household- and community-level characteristics and their interactions at a point in time.

Let i = 1, 2, 3,……………,N denote household at stage or level one and j= 1, 2, 3,………………,J denote communities at level two. Within the two-level hierarchical model, households are nested within communities. Given this, welfare of household i in community j can be represented by

$$lnc_{ij} = \beta_{0j} + \beta_{1j}X_{ij} + \varepsilon_{ij} \quad\text{..(1)}$$

The constant term as well as the slopes of equation 1 of each community is assumed to be affected by observed (Z) and unobserved (u_{0j} and u_{1j}) community factors as shown in the equations below:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}Z_j + u_{0j} \quad\text{..(2)}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}Z_j + u_{1j} \quad\text{..(3)}$$

Substituting equations (2) and (3) into (1) then yields

$$lnc_{ij} = \gamma_{00} + \gamma_{01}Z_j + (\gamma_{10} + \gamma_{11})X_{ij} + u_{0j} + u_{1j}X_{ij} + \varepsilon_{ij} \quad\text{..(4)}$$

In this two-level hierarchical model, there are three error terms to be empirically estimated: u_{0j}, u_{1j} and ε_{ij}, as shown by equation 4. The last error term captures the idiosyncratic shocks while the error from equation 2, that is u_{0j}, captures the direct effects of covariate shocks, and the error term from equation 3, u_{1j}, captures the indirect effects of covariate shocks on each household.

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66 Skoufias, Emmanuel and Baez, Javier. (2021). Op. Cit.; Chaudhuri, Shubham. (2003). Op. Cit.; Christiaensen, Luc and Subbarao, Kalanidhi. (2005). Op. Cit.; Gunther, Isabel and Harttgen, Kenneth. (2009). Op. Cit.

In the first stage, equation 4 may be estimated using mixed-effects maximum likelihood regression, and in the second state, the OLS squared residuals $\varepsilon_{ij}^2\varepsilon_{ij}^2$ and $u_{0j}^2 u_{0j}^2$ and their squared sum $(u_{0j}+u_{1j})^2(u_{0j}+u_{1j})^2$ may be regressed on $X_{ij}X_{ij}$ and Z_jZ_j

$$\varepsilon_{ij}^2 = \theta_0 + \theta_1 Z_j + \theta_3 X_{ij}Z_j \varepsilon_{ij}^2 = \theta_0 + \theta_1 Z_j + \theta_3 X_{ij}Z_j \quad (5)$$

$$u_{0j}^2 = \tau_0 + \tau_1 Z_j u_{0j}^2 = \tau_0 + \tau_1 Z_j \quad (6)$$

$$(u_{0j}+\varepsilon_{ij})^2 = \pi_0 + \pi_1 Z_j + \pi_2 X_{ij}Z_j (u_{0j}+\varepsilon_{ij})^2 = \pi_0 + \pi_1 Z_j + \pi_2 X_{ij}Z_j \quad (7)$$

The coefficients estimated from equations 4, 5, 6, and 7 are to be used to estimate the expected mean and the expected idiosyncratic $\sigma_{\varepsilon_{ij}}^2 \sigma_{\varepsilon_{ij}}^2$, covariate $\sigma_{u_{0j}}^2 \sigma_{u_{0j}}^2$, and total $\sigma_{u_{0j}+\varepsilon_{ij}}^2 \sigma_{u_{0j}+\varepsilon_{ij}}^2$ variance of a household's consumption, based on the household's and their communities' observed characteristics.

The probability that a household's welfare falls below the poverty line z (vulnerability to poverty) may be estimated by assuming welfare is log-normally distributed so that

$$\hat{v_{ij}} = P(\ln(welfare)_{ij} < \ln z | X, Z) = \phi\left(\frac{\ln z - \ln(\widehat{welfare})_{ij}}{\sqrt{\sigma_{u_{0j}+\varepsilon_{ij}}^2}}\right)u_{0j} \quad (8)$$

Equation (8) can then be used to derive an estimate of the **vulnerability to poverty** from covariate level shocks by replacing $\sigma_{u_{0j}+\varepsilon_{ij}}^2 \sigma_{u_{0j}+\varepsilon_{ij}}^2$, in the denominator, by $\sigma_{u_{0j}}^2 \sigma_{u_{0j}}^2$, while an estimate of the vulnerability to poverty from idiosyncratic shocks can be obtained by using $\sigma_{\varepsilon_{ij}}^2 \sigma_{\varepsilon_{ij}}^2$, in place of $\sigma_{u_{0j}+\varepsilon_{ij}}^2 \sigma_{u_{0j}+\varepsilon_{ij}}^2$.

Finally, considering that all households bear a non-zero probability of falling below the poverty line, the identification of the vulnerability status requires setting a threshold for the probability of being vulnerable to poverty within a specific time period. Skoufias and Baez (2021) denote that a standard threshold to be classified as vulnerable is if the household has a likelihood of falling below the poverty line equal to or greater than 50 percent in the next two years. This implies that a household is considered vulnerable if the probability of becoming poor in any given year is at least 29 percent (0.29).[67] It is important to note that the choice of the vulnerability threshold determines whether a household is vulnerable or not. In general, the higher the threshold, the lower the number of households identified as vulnerable. Therefore, the choice of this threshold is intrinsically linked to the policy goals the country has set. In this study, the standard threshold denoted by Skoufias and Baez (2021) is used.

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67 Consider that the probability of a household's welfare to be higher than the poverty line is denoted by $P = Prob(\ln(welfare)_i > \ln(poverty\ line))$ in any given year. Then, the probability of becoming poor in the next two years is represented by $v_{ij+1} = 1 - P^2 \geq 0.5$, considering the 0.5 threshold. Solving for P, then $P = \sqrt{0.5} = 0.71$, which denotes that P=0.71. This further implies that the probability of a household's welfare falling below the poverty line in any given year is 0.29 (1-P=0.29).

B.   Variables considered in the model

Table A1: List of variables considered in the model

Dependent variable	
Welfare aggregate	Logarithm of monthly consumption per adult equivalent

Explanatory variables	
Household level variables	
Geographical indicators	
Urban	1 if household resides in urban areas, 0 otherwise
Household head characteristics	
Gender of household head	1 if head is female, 0 if male
Age	Age of household head in years
Employed	1 if head is employed, 0 otherwise
Employed in agriculture	1 if head works in agriculture, 0 otherwise
Family characteristics	
Household size	Number of household members
Dependency ratio	Number of members between 0 and 14 and older than 65 as a ratio of total number of members
Overcrowding	Three or more people per habitable room
Income Diversification	
Stable income	Number of members working as paid-employee or employer
Not stable income	Number of members working as self-employed
Community level variables	
Improved sanitation	Proportion of households with access to improved sanitation in the community
Access to electricity	Proportion of households with access to electricity in the community
Farm households	Proportion of farm households in the community
Households at risk of extreme heat	Proportion of households at risk of extreme risk at 5-, 10-, and 100-year return periods in the community
Livestock at risk	Annual average number of livestock units potentially affected by drought in the community
People at risk of drought	Annual average number of people living in drought affected areas in the community

C.   Regression models

Variable	Log Per Capita Consumption
Proportion of farm households	0.047
	(0.403)
Community access to electricity	-0.235
	(0.482)
Community access to improved sanitation	0.405
	(0.361)
Proportion of hhs at heat risk in 100 years	-0.234**
	(0.117)
Mean risk of extreme heat 20-year return	0.353***
	(0.113)
Mean risk of extreme heat 100-year return	-0.082
	(0.055)
Annual average number of livestock units potentially affected by drou	0.000
	(0.000)
Annual average number of people living in drought affected areas	0.000
	(0.000)
Gender of household head	0.059***
(1 if head is female, 0 if male)	(0.017)
Age of household head	-0.015***
	(0.005)
Household head years of education	0.104***
	(0.003)
Head employment status	0.171***
(1 if head employed, 0 otherwise)	(0.038)
Head working in agriculture	-0.177***
(1 if head works in the agricultural sector, 0 otherwise)	(0.024)
Household size	-0.088***
	(0.003)
Number of members between 0 and 14 and older than 65 as a ratio o	-0.363***
	(0.032)
Urban	0.441***
	(0.038)
Number of income earners in the hh	0.278***
	(0.014)
Mean of number of self-employed members	0.027**
	(0.012)
Overcrowding	-0.390***
(Three or more people per habitable room)	(0.019)
Number of livestock affected by droughts * head agriculture	-0.000***
	(0.000)
Community access to electricity * head age	0.023***
	(0.006)
Community proportion of farm households * head age	0.020***
	(0.006)
Constant	4.565***
	(0.353)
Observations	10,679
Number of groups	74

Note: Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

D.   Robustness checks

In this study two robustness checks are performed: i) the model is estimated using different vulnerability thresholds, and ii) extreme heat risk information at the community level is excluded from the model. The results of these robustness checks are presented below.

a.   Exploring different vulnerability thresholds

The vulnerability rate is the fraction of the population with an estimated probability of being in poverty using a certain probability threshold. Therefore, the identification of vulnerable households requires: i) a threshold for the probability of being vulnerable to poverty, and ii) a time horizon. In this study, Skoufias and Baez (2021) are followed to classify as vulnerable those households which have a likelihood of falling below the poverty line equal to or greater than 50 percent in the next two years; thus, the vulnerability threshold is 0.29. The choice of this threshold is linked to the policy goals the country has set, as well to the budgetary constraints that exist in this country. To assist in determining a threshold, various vulnerability rate changes under different vulnerability thresholds are explored. In this section, the results of using different vulnerability thresholds are presented.

There is a reverse relationship between the fraction of the population identified as vulnerable and the vulnerability threshold. Particularly, it is noted that the higher the threshold, the lower the vulnerability rate, and vice versa, the lower the threshold, the higher the proportion of people identified as vulnerable. This relationship can be better understood considering two extreme cases. First, when the vulnerability threshold is set at 0 percent (e.g., the probability of being poor is zero), the entire population is considered vulnerable, since all households have an estimated non-zero probability of living in poverty. The second case refers to the other extreme. When the vulnerability threshold is set at 100 percent (e.g., the probability of being poor is 100 percent), no one is considered vulnerable. Figure A1 below shows the different vulnerability rates for a given probability of being poor.

Figure A1: Vulnerability rate for different poverty (vulnerability) thresholds (Source: Author's own calculations)
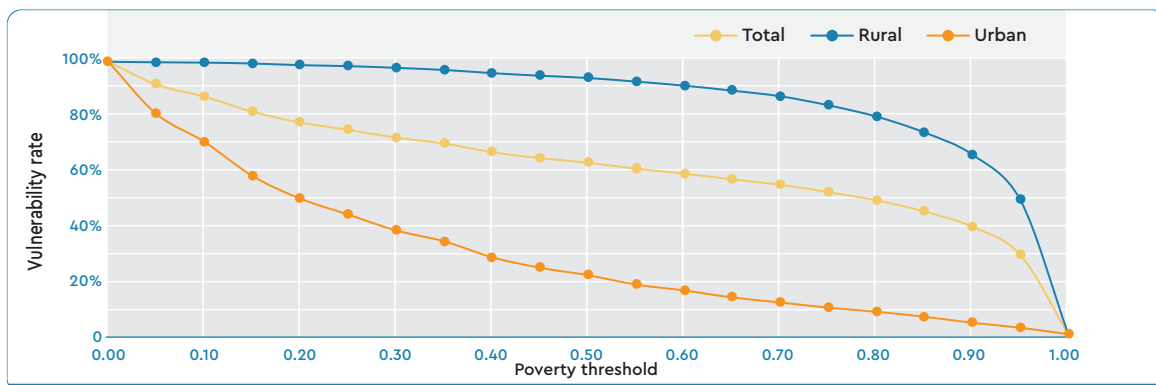
The dashed vertical line shows the probability threshold adopted in this study. At this level, nearly 63 percent of the population in 2015 were identified as vulnerable at the national level. In rural areas, the proportion of the rural population identified as vulnerable is 94 percent, while in urban areas 21.6 percent of the population is vulnerable. Notably, at the national level, between the probabilities of 40 and 55 percent of being poor, the vulnerability rate remains at similar levels (between 61 and 67 percent). In the case of rural areas, this is significantly more pronounced, as the vulnerability rate remains high until a probability level of around 80 percent.

b.   Excluding extreme heat risk information from the model

The next robustness check explored estimating the model without the information on extreme heat at the community level. Figure A2 below shows the results for the baseline model (using 2015 data and the list of variables presented in Table A1) and the restricted model, which excludes information on the proportion of households in the community at risk of extreme risk at 5-, 10-, and 100-year return periods. The results denote virtually no changes in the vulnerability rate when excluding these community characteristics at the national, rural, and urban levels.

**Figure A2: Poverty and vulnerability rates (%) baseline and restricted models
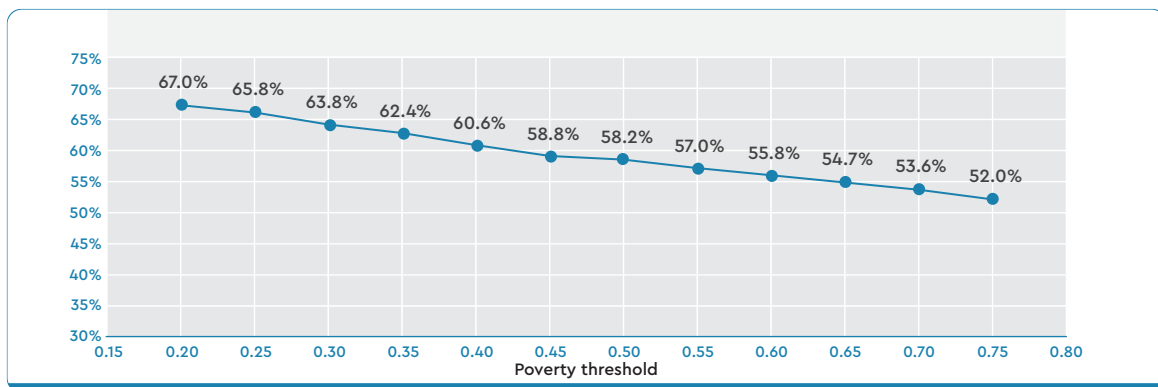(Source: Author's own calculations)**
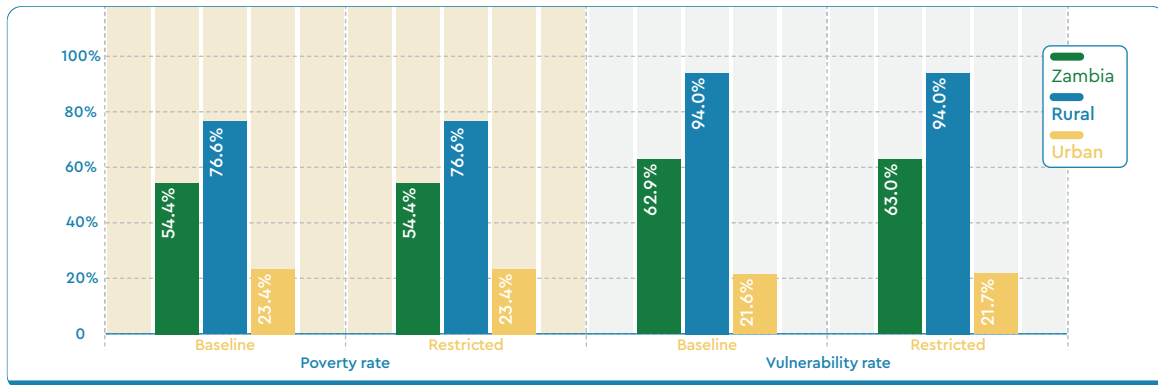
E.   Changes in real consumption 2010 – 2015

**Figure A3: Change in real consumption (%), 2010 – 2015
(Source: Author's own calculations)**
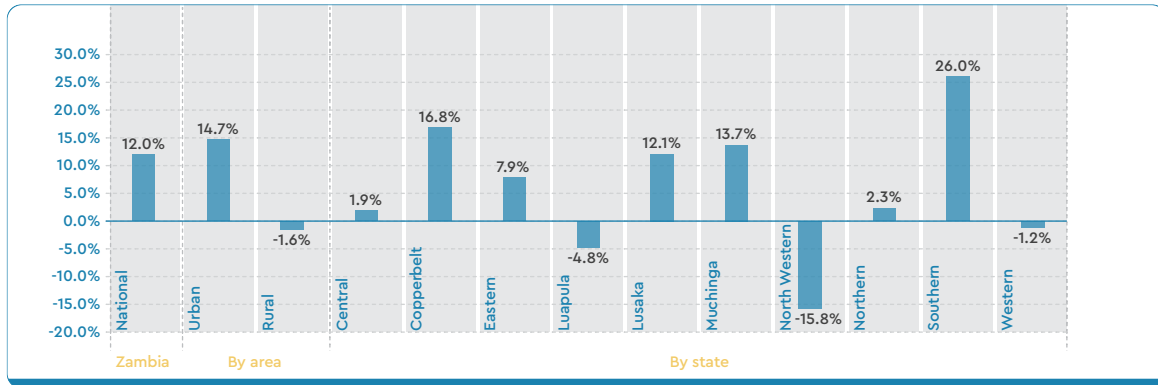
F.   Changes in expected coverage needs for a given poverty threshold

**Figure A4: Expected coverage needs (percentage of the population) vs. poverty thresholds
(Source: Author's own calculations)**

G.   Conceptual Framework of Part 1 of the Stress Test

The identification of vulnerable households requires the setting of a probability threshold and a specific time horizon, which are ultimately policy decisions and depend on the country's development goals. The final size of the estimated vulnerable population will depend on two parameters that are ultimately policy decisions: the vulnerability threshold and the time horizon. The standard threshold adopted in the literature identifies a household as vulnerable if its likelihood of being poor in the next two years is equal to or greater than 50 percent. This implies that a household is considered vulnerable if the probability of becoming poor in any

given year is at least 29 percent (0.29).[68] In general, the lower the threshold the higher the number of vulnerable households. The selection of a tighter or looser threshold is intrinsically linked to the national development objectives and policy goals that the country has set. The availability of resources allocated to the social protection system –both in normal times as well as in times of crises— may also guide the selection of the appropriate threshold for the country.

Vulnerability to poverty has two sources: expected poverty due to sustained low levels of consumption and expected poverty due to exposure to shocks. A household may find itself in poverty for two reasons: either its endowments – e.g., human and physical capital – are low and therefore its consumption prospects are low, or it faces a negative shock which it cannot cope with. The first source of vulnerability is known as **poverty-induced vulnerability**, while the second source is denoted as **risk-induced vulnerability**. Poverty-induced vulnerability (or structural vulnerability) occurs when households in a typical year do not have the physical assets and human capital endowments to drive their consumption or income levels above the poverty line. Risk-induced vulnerability (or transitory vulnerability) is given when households in a typical year are above the poverty line but do not have the means to remain over the poverty line in the event of a negative shock (either household-level shocks such as sickness or job loss, or community-level shocks such as natural disasters or macroeconomic shocks).

As a result, this concept of vulnerability can be characterized in terms of household consumption's mean and variance. Figure A5 below illustrates the point. Each orange square represents the mean consumption level of each household, the grey horizontal line represents the variance of consumption (i.e., summarizes the different consumption levels that a household is expected to face under various scenarios), and the yellow vertical line represents the poverty line. For example, household A is expected to be poor under all states of the world. No matter the circumstances, its consumption is always below the poverty line. In contrast, household B is not expected to be poor under any state of the world. No matter the size of the negative shock, household B's consumption is always above the poverty line. According to Figure A5, vulnerable households can be classified into 2 groups. Panel A shows vulnerable households that are poverty-induced: their expected level of consumption falls below the poverty line. Note that some of these households are not always poor (they may experience a positive shock that brings their consumption above the poverty line). But in expectation, they are poor. Meanwhile, households in Panel B experience risk-induced vulnerability: their expected consumption level is above the poverty line but given a negative shock their welfare can fall below the poverty line.
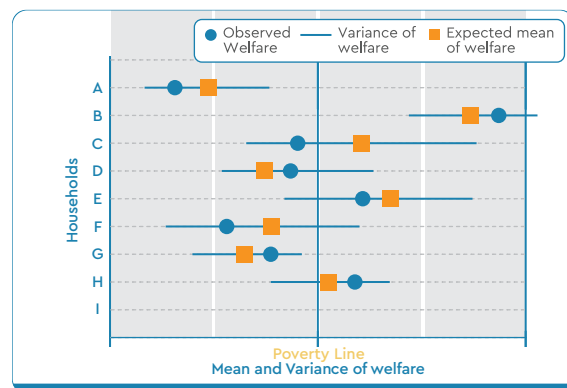
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68 Following Skoufias and Baez (2021), let $P=Prob(\ln c_{ij}>\ln z)$ denote the probability of being above the poverty line in any given year. Then, assuming the poverty status of a household is independent over time, the probability of being vulnerable to poverty at least once in the next 2 years (i.e. using the 0.5 threshold), is given by $v_{ij,t+2}=1-P^2\geq0.5$. Solving this equation for P yields $P=0.71$. This implies that the probability of falling below the poverty line in any given year is 0.29 (= 1–0.71).

Figure A5: Vulnerability to Poverty Characterized by the Mean and Variance of Welfare
(Source: Adapted from Skoufias and Baez, 2021)

Figure A6: Observed, expected mean and variance of welfare (Source: Adapted from Skoufias and Baez, 2021)
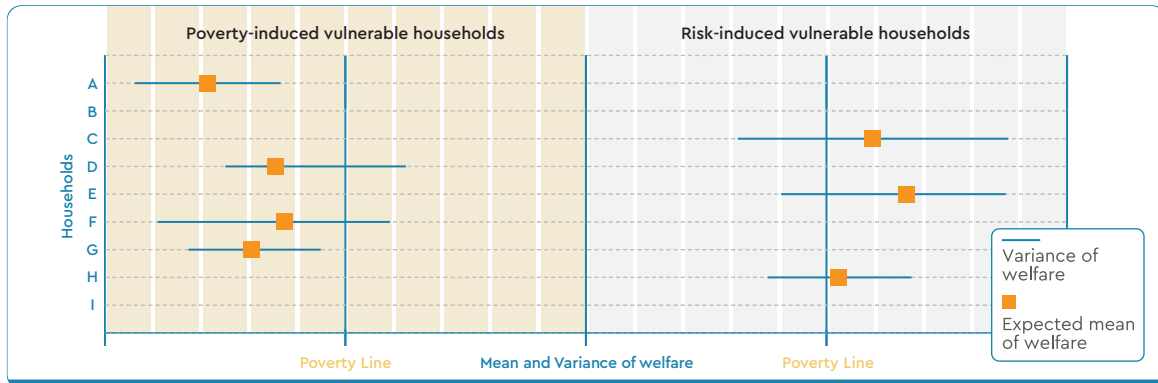
The information collected in household surveys shows the realization of welfare at a given point in time; therefore, targeting households based on their observed poverty status is not the same as targeting households based on their vulnerability status. A household's poverty status is given by its observed welfare at one point in time (blue dots in A), which in turn depend on the specific circumstances realized. In Figure A6 below, five households (A, C, D, F, and G) were identified as poor at the time of the survey, while seven households (all except B) are identified as vulnerable to poverty. In the representation in Figure A6, the number of households in poverty could range from two to seven.[69] The model estimated in this report aims to use the data collected in a household survey at one point in time (blue dots) to estimate the mean and variance of household consumption (orange squares and black lines) in order to identify those vulnerable to poverty.

The decomposition of the sources of vulnerability into poverty or risk can guide policies to improve service delivery. Understanding the main sources of vulnerability is critical for targeting beneficiaries at the time of crisis. For instance, in a context where vulnerability is mainly driven by low endowments, policies that address the chronic drivers of poverty may be more relevant. Examples include cash transfer programs as well as programs that promote access to higher education and economic opportunities. In contrast, when households face high variability in consumption, it is more likely that vulnerability to poverty is

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69 Households A and G are expected to be poor under any circumstance, given their low welfare prospects.

mainly driven by these fluctuations. When vulnerability is primarily risk-induced, resilience-focused interventions may be more relevant, such as insurance type programs.

A further distinction between risk driven by idiosyncratic shocks (i.e., those that are household-specific) versus risk driven by covariate shocks (i.e., those that are community-specific) will further refine the type of policy response needed. Households in developing countries are frequently affected by severe shocks, which can lead them to experience a high volatility in their consumption, and therefore, in their poverty status. These shocks can arise from: i) shocks that affect all households in the same community, also known as 'covariate shocks,' such as droughts, floods, increases in food prices, etc., and ii) `idiosyncratic shocks,' which are those that are specific to the household, such as job loss, a health shock, a sudden death, etc.[70]. The identification of the relative contributions of covariate and idiosyncratic shocks can help guide policy decisions at the time of prioritizing government efforts at different geographical levels as well as foresee the likely budgetary needs necessary to face shocks when they strike. For instance, in territories where the relative contribution of covariate shocks is larger (e.g., households living in dwellings located in floodplains)[71] the social protection system should be able to effectively scale-up to protect the community. In places where the prevalence of idiosyncratic shocks is higher, the development of insurance mechanisms may be more appropriate.

Under this framework, it is the poverty-induced vulnerability plus the portion of risk-induced vulnerability driven by covariate shocks that determine the expected demand for social protection support under an adaptive social protection system. While a social protection system addresses all sources of vulnerability, it is these two subcomponents which determine the size and scope of the social protection response that is required to be scaled-up in a short timeframe in the event of a shock.

H.   Stress Test Questionnaire

Programs & Delivery Systems

Programs		
1	What kind of noncontributory cash/ in-kind transfer programs does the government operate?	» None, or donor/NGO-run programs only = 1 » Government-run programs exist, but in limited geographic areas = 2 » Government-run programs exist nationally but are limited to specific categories (e.g. disability, old age pension) = 3 » Government-run programs are operated nationwide but are fragmented or overlapping = 4 » A coordinated government-run program(s) is present nationally without fragmentation or overlaps72 = 5

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70 Alderman, Harold and Paxson, Christina. (1992). *"Do the poor insure? A synthesis of the literature on risk and consumption in developing countries"*. *Policy Research Working Paper Series No. 1008.*

71   Floodplains are areas around rivers that naturally flood to compensate for the overflow of waters, and thus is a flood-prone area.

72 Overlap in beneficiaries that can lead to "double dipping".

Programs

2	What kind of livelihoods/ employment protection programs exist?	» None, or donor/NGO-run programs only = 1 » Selected programs exist (some of them run by the government), but are limited in scope and/or to certain geographic areas = 2 » Programs exist nationally but are limited in scope (e.g. skills training only) = 3 » Various programs (delivering, e.g., skills plus cash, credit and/or counseling) are operated nationwide but are fragmented or overlapping = 4 » An integrated government-run livelihoods program (or in complete coordination with NGOs) is operating nationally = 5
3	Does the amount of benefit provided during shocks change as per circumstances to ensure that there is no drastic change in household welfare?	» Amount of benefit far from allowing households to maintain pre-shock consumption levels =1 » Amount of benefit covers a small part of the consumption impact and decision on amount is based on resources available rather than standard protocol =2 » Amount of benefit covers significant portion of the consumption impact, though coverage still a priority (can sometimes cover a lot sometimes a little) =3 » Amount of benefit provided compensates significantly (though not fully) for consumption impact, with some parameters for transfer amount outlined in protocol and minimal acceptable value = 4 » Amount of benefit provided compensates for potential consumption impact with formal guidelines/standards in place= 5
4	What is the coverage of social protection programs in the country?	» 0–15%=1 » 15%-30%=2 » 30%-50%=3 » 50 to 70%=4 » Over 70%=5

Latent (1)	Nascent (2)	Emerging (3)	Established (4)	Advanced (5)
Government does not have any substantial programs, most SP covered by NGOs and donors and limited coverage of SP, leading to low levels of resilience among its population	Government has some SP programs and limited coverage, which remain uncoordinated and thus limiting resilience building	Government has relevant programs at the national level and some basic coverage which can promote resilience	Significant coverage through SP, through national safety net programs, and livelihood ones ensuring strong resilience of population	Strong coverage of safety net and livelihood programs providing a suite of interventions and a lot of complementarity ensuring population is very resilient to shocks

Delivery system

1	Are there communication mechanisms in place that can be leveraged in times of a shock to inform target beneficiaries about the program?	» No=1 » Yes, but instruments are used in an ad hoc manner and are not tailored to the target population (e.g. using pamphlets or using pamphlets in one language and not others when target population is illiterate) = 2 » Yes, with more effective strategies in some areas but is not implemented well in other areas = 3 » Yes, a comprehensive strategy is implemented (or is available) in both urban and rural areas, which are served by the program, but don't have capacity to expand to areas not currently covered = 4 » Yes, a comprehensive strategy that uses multiple sources (e.g., a mix of cell phone, tv/radio, newspaper and other print media, and local community leaders) is available that can be scaled up as needed= 5

Delivery system

2	Is the delivery of assistance informed by a needs assessment?	» There is no needs assessment tool=1 » There is a tool designed for needs assessments for cash as well as other assistance (such as food or shelter), but there are no mechanisms to link it to existing programs=2 » There is a tool designed for needs assessments and it informs the delivery of assistance through social protection programs via cash transfers=3 » There is a tool designed for needs assessments and it informs the delivery of assistance through social protection programs assistance other than cash transfers (such as food or shelter) =4 » There is a tool designed for needs assessments and it informs the delivery of assistance through the social protection programs via cash transfers as well as other assistance (such as food or shelter) =5
2	How are beneficiaries enrolled in the program in times of shock?	» No enrolment mechanisms specified in case of horizontal expansion or existing beneficiaries have to register again for vertical expansion = 1 » In person near their place of residence at a specific time (no permanent structure available for registration) =2 » Self-enrollment in person (kiosk, one stop shop) or online/phone without provision for alternative access = 3 » Self-enrollment by phone or internet as well as in person = 4 » Automatic enrollment Or multiple mechanisms used that ensure everyone among target population73* can be enrolled =5
3	What percentage of the poorest two quintiles of population has a government authorized/ recognized ID (national ID, birth certificate, voters ID, tax ID, etc.)?74	» Total coverage, not the difference between the affected population and ID prevalence » 0–20%=1 » 20–40%=2 » 40–60%=3 » 60 to 80%=4 » Over 80%=5
4	Can beneficiaries or target population register complaints? Is there a grievance redress mechanism in place to resolve the complaints?	» No/yes, but not functional =1 » Yes, but only through community committees/ in person and is limited to beneficiaries only =2 » Yes, there are multiple ways to register complaints, which can also be used by non-beneficiaries. However, complaint resolution process is not tracked =3 » Yes, there are multiple ways to register complaints with triggers for response that tracks complaint resolution process = 4 » Yes, there are multiple ways to register complaints with triggers for response and tracking of complaint resolution process. After complaint resolution, follow up with beneficiaries to get feedback = 5
5	Does the shock response expansion have specific programs/design features to ensure inclusion of women?	» No specific efforts are made to ensure inclusion of women=1 » Some efforts are made to improve access or outreach, but these are not effective or contextually appropriate =2 » Some efforts are made to improve access or outreach, including context-specific adjustments or measures to address upstream constraints (e.g., provision of IDs or SIM cards to women to have better access) = 3 » Shock response plan includes a social mobilization component on top of tweaks in design features that tries to influence behavior or change restrictive norms to improve women's access to systems = 4 » The existing system already accounts for the major constraints faced by women and includes strategies to mitigate their constraints and improve access =5
6	Does the shock response expansion have specific programs/design features to ensure inclusion of other vulnerable categories (people with disabilities, elderly, refugees etc.)?	» No specific efforts are made to ensure inclusion of other vulnerable categories=1 » Some efforts are made to improve access or outreach, but these are not effective or contextually appropriate=2 » Some efforts are made to improve access or outreach, including context specific adjustments or measures to address upstream constraints=3 » Shock response plan includes a social mobilization component on top of tweaks in design features that tries to influence behavior or change restrictive norms or constraints to the inclusion of other vulnerable groups = 4 » The existing system already accounts for the major constraints faced by other vulnerable groups and includes strategies to mitigate their constraints and improve access=5

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73 'Target population' refers to the intended beneficiaries a of a particular benefi, i.e. those who you want to be able to reach when you scale up a benefits/relief program.

74 This data is available in Findex database. Other sources such as government records, if available, can also be used.

Latent (1)	Nascent (2)	Emerging (3)	Established (4)	Advanced (5)
The basic SP system delivery chain is limited and has no ability to flex and adapt to shocks. Remains inaccessible to women and/or other vulnerable groups.	The basic SP system is somewhat adequate and has minimal ability to adapt to shocks. However, can remain exclusionary.	SP delivery system has some adaptive capacities to respond to shock. There is a focus on inclusion but right now addresses the needs of only some of the groups.	SP system is for the most part adaptive and able to respond to different types of shock with some shortfalls. Efforts are made to be inclusive of all vulnerable groups but some groups remain excluded.	SP delivery system fully adaptable to respond to all relevant shocks. Mechanisms in place to make the program accessible to all the vulnerable groups.

Payment Mechanism

1	Currently, how are benefits or cash transferred to the beneficiaries? *Digital transfers or e-payment refer to prepaid cards, magstripe debit cards, smart cards, mobile money, accounts in financial institutions. Digital component does not have to be end to end but can refer to the sending the payment digitally to a bank account. Digital payments here include mobile payments, credit or debit cards, online bank account etc.*	» Payments/transfers are cash based or in kind undertaken in person by MFIs or other and no set up for digital transfers=1 » Payments/transfers cash based or in kind undertaken in person by MFIs or other but a small scale/pilot or discussion on digital transfers ongoing=2 » Some payments are digital or paid to bank accounts=3 » Most payments are digital or paid to bank accounts but use of funds is restricted to cash withdrawals from designated places =4 » All payments are digital with ability to spend directly from the account, e.g. by debit card at merchant POS machine=5
2	How quickly can the payment system scale? *(Thinking of all the processes required to get a payment to beneficiary, from the launch of an intervention/ operation how long would it take for beneficiary to receive payment assuming that within a few days , i.e. quickly is the goal)*	» Payments would require significant time as system not in place or nor appropriate for response = 1 » Payments would experience some delay relative to shock as some systems in place but not most appropriate for some shock(s) identified in part 1=2 » Payments would experience moderate delays as new accounts would need to be set up with moderate delays for identification and approval = 3 » Payments can be made with little delay for some shock(s) identified in part 1 = 4 » Payments can be made rapidly for all shocks identified in part 1 (consider for different shocks different payment systems may be necessary, so ability to be able to adapt payment method as necessary-fit for purpose- is essential) = 5
3	What is the capacity of the payment system to handle a horizontal expansion of the main program?	» Expansion of payments/benefits cannot be done at scale of need and limited to already targeted areas/localities=1 » Expansion payments/benefits but systems can be done at limited scale of need =2 » Some ability to moderately expand payments/ benefits relative to need =3 » Significant ability to expand payments/benefits relative to need =4 » Strong ability to expand transfers/ benefits to cover most of the need or country if needed

Latent (1)	Nascent (2)	Emerging (3)	Established (4)	Advanced (5)
No mobile or digital payments as of now and no ability to scale payments in times of shocks.	Possibility of mobile/digital payments for regular transfers but scale up of payments or assistance for shock response is limited in scale and experience severe delay.	Some payments made by mobile/digital methods for regular system. There is some ability to scale payments or assistance delivered beyond current case load but moderate delays and limited ability to tailor payment system to specific shock or need	Majority payments are mobile/digital, with exception of very remote/vulnerable populations. In times of shocks payments or assistance delivery can be done with relatively no delay and reach significant scale.	All payments are mobile/digital with in-built mechanisms to ensure access but the system can also adapt to any shock (modify payment mechanism to suit shock) and respond relatively quickly and at the required scale.

2. Data and Information

Early Warning systems

1	Risk information and communication	Is/are there a functional EWS for the shock(s) the country is exposed to? (shocks that are identified in part 1) An EWS is functional if it can monitor and alert on the occurrence of a natural hazard or shock	» No=1 » Yes, but not fully functional or pilot form=2 » Yes, for some shock(s) and functional while some others exist but very weak /not fully functional =3 » Yes, for most or all shocks and mostly functional=4 » Yes, for all regular/known/recurrent shocks and with high functionality/multi-hazard early warning system=5
2		Is the national EWS capable of warning (monitoring and alerting) of one or more shocks identified in part 1? Capable refers to ability to collect high quality, accurate data in real time. High quality data should have scientific basis	» Inadequate monitoring and warning capability of any hazard (for natural shock)/ or other shocks (health, food insecurity etc.) = 1 » Some but limited monitoring and/or warning capability of hazards /or other shocks =2 » Some adequate monitoring and/or warning capability for hazards /or shocks most relevant to the country, though some issues with accuracy still, and limited ability to monitor other less relevant more infrequent shocks = 3 » Significant monitoring capability for hazards /or other shocks most relevant to the country but no other hazards/shocks =4 » High level of monitoring and warning capability across hazards and/or shocks =5
3		Has the government undertaken vulnerability and risk assessment(s) to assess the impact of shock(s) identified in part 1 based on EWS data?	» No detailed vulnerability or risk assessments by govt exist = 1 » Outdated or poor-quality assessment(s) of risk/vulnerability exist = 2 » Some assessment to determine impact of different shocks on different populations exists but relies heavily on external support /or is not wholly adequate = 3 » Government has the capacity to (and does) undertake risk/ vulnerability assessment for some shocks regularly based on hazard or shock exposure and data and provide granular data on people in need = 4 » Government has the capacity to (and does) undertake a credible risk/vulnerability assessment regularly that is capable of providing granular data on estimated people in need in advance or very quickly in response to multiple shocks = 5

Early Warning systems

4	Is there an agreed trigger to initiate shock response or to scale up social protection systems in shock response (for the shocks identified in part 1)?	» Shock response does not rely on EWS data for response = 1 » There is an ad hoc linkage shock response and EWS, where EWS data is used only sometimes = 2 » Some attempts to identify and document EW indicators, which can be used to plan disaster response, but actual timing and scale of response follow resources =3 » EW indicators are well-defined and documented with pre-agreed trigger thresholds to initiate a shock response. However, this is only limited to pilot programs or little coverage =4 » Defined/automatic EW triggers that lead to relevant agencies initiating the shock response, which includes guidelines on amount and coverage for some shock(s) = 5

Latent (1)	Nascent (2)	Emerging (3)	Established (4)	Advanced (5)
No EWS or not functional.	EWS covers one a/some shock(s) though not fully reliable as and data quality inputted into EWS and provided by EWS remains weak.	EWS for a/some shocks is mostly reliable though falls short on some quality and/or timeliness aspects of the data.	EWS for all shocks are mostly reliable with agreed upon trigger to initiate and plan the response.	EWS for all shocks with good quality and timely data with ability for real time monitoring across hazards and indicators with clear triggers and implementation guidelines and mechanisms in place.

Registry

1		What kind of registry or database is used to target beneficiaries for a shock response? This question is not scored, and allows the team to frame the discussion with the right terminology	» A program social registry » Several program registries/databases » A national registry » A voter ID database » Humanitarian partners databases » Civil registry » Social security database » Telecom companies or client lists » Pension and social security databases » Dedicated MIS » None of the above/ad-hoc registration
2	Coverage and Scale	What is the difference in terms of urban coverage in the registry/databases[75] vs. the likely affected urban population based on simulation? To answer this question, there needs to be a number of average populations affected by shock from part 1. If you have not done Part 1 simulation, please use an estimate on the number of people in need.	» Calculate the difference between simulated number of affected urban population and those in the registry » Over 70%=1 » 50–70%=2 » 30%-50%=3 » 15–30%=4 » More households in the registry/database, or 0–15% fewer in the database than urban affected population%=5

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75 Given there is a huge variation across countries in how they identify and reach target population, here registry/database can refer to social registry, beneficiary registry, any other database that has significant coverage (e.g., tax records, voter registration systems ,etc.), any database that is currently being used for a specific program or any database that can potentially be used for the purpose.

Registry

3	What is the difference in terms of rural coverage in the registry vs. the likely affected rural population based on the simulation? To answer this question, there needs to be a number of average populations affected by shock from part 1. If you have not done Part 1 simulation, please use an estimate on the number of people in need.	» Get the difference between simulated number of affected rural population and those in the registry » Over 70%=1 » 50–70%=2[76] » 30%-50%=3 » 15–30%=4 » More households in the registry/database, or 0–15% fewer in the database than urban affected population%=5
4	Share of records older than 3 years in the registry or database used? It can also be an approximation	» Over 70% (or information not available) = 1 » 50–70%=2 » 30%-50%=3 » 15–30%=4 » 0–15%=5
5	Based on approximation, are disaster prone areas covered by the registry or relevant databases?	» None=1 » Few disaster-prone areas covered=2 » Some of the disaster-prone areas covered = 3 » Most of the disaster-prone areas covered =4 » All the disaster-prone areas covered =5
6	Is there a protocol for updating the registry or relevant database (full update not day to day updates)? In ideal circumstances, a protocol would include the following but can vary from country to country: » Frequency of data collection/ update » Whether it allows dynamic data entry » Points of data entry or access (door to door, one stop shop, online etc.) » Access to entry points by potential beneficiaries	» No=1 » Yes, a protocol exists but has never been followed=2 » Yes, a protocol exists and has been mostly followed with some shortcomings (whether delays, or some deviation from the protocol or short of the full needed update) OR a protocol does not exist, but some updates have happened regardless = 3 » Yes, a protocol exists and has been followed and helped update the database completely, but the updates are irregular and at least 5 years apart = 4 » Update is regular and/or automatic =5
7	Does the data in the registry or in the databases used allow targeting, identifying, locating, and contacting the beneficiary and transferring the benefit (i.e. having the address/ phone/account information of the beneficiary) during shock response? For seamless use of social registry during a disaster response, it must have adequate information that would allow targeting people based on changing needs (for example targeting for poverty while also being able to contact and locate them).	» Data collected in the registry/database is not sufficient to target in a shock response =1 » Data collected in the registry/database is somewhat sufficient to target during a shock=2 » Data collected in the registry/database is mostly sufficient to target for a/some shock(s)=3 » Data collected in the registry/database is mostly sufficient to target for all shocks=4 » Data collected in the registry/database is fully sufficient to target for all shocks=5

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76 This figure is calculated based on the 8.8 million Zambians living under the national poverty line, and the 13.2 million people living under the vulnerability line (Poverty line X 1.5).

Registry

8	Interoperability and coordination	Do humanitarian partners use the government's registry or other relevant government databases for their response?	» No, humanitarian partners use their own proprietary beneficiary lists, with little coordination of lists =1 » Some use it but not consistently, relying on their own lists with some coordination but remains insufficient =2 » All have access but don't use it consistently relying on their own lists partially with some coordination, but overlaps remain =3 » They have access but use their own proprietary lists. However, mechanisms in place to avoid overlap in targeted beneficiaries i.e. different programs are not covering the same beneficiaries= 4 » All have access and use it consistently /or humanitarian partners not involved in response =5
9		Are there other adequate (up to date, relevant data, geographic coverage) databases (telecom, humanitarians) available that can significantly expand reach? Note: beyond the data the government mainly uses. (e.g. in the social registry).	» No other databases available=1 » Databases available but not interoperable=2 » Databases available and could be made interoperable but no data sharing pre-agreements = 3 » Databases available and have data sharing pre-agreements = 4 » Databases available, which are interoperable and allow seamless expansion, or the government does not need to rely on other databases as its own database/registry has full coverage = 5
10	Data privacy	Are there any data privacy regulations with specified course of action in case of privacy breach?	» No data privacy/security regulations exist = 1 » Data privacy regulations exist but are not implemented = 2 » Data privacy regulations exist with strict data sharing protocols with the private sector. However other government agencies can access and use this data = 3 » Data privacy regulations exist with strict data sharing protocols where the beneficiary is made aware of all the entities that could access their data = 4 » Data privacy regulations exist where beneficiary data is not shared with anyone. Other entities can only access aggregated or anonymized data = 5

Latent (1)	Nascent (2)	Emerging (3)	Established (4)	Advanced (5)
Registries/databases not adequate: Very low coverage of registry/ beneficiary lists/ databases which are fragmented and not adequate for targeting.	Registries/databases somewhat adequate: Registry/databases coverage is limited to no more than 50 percent of potential population in need population and few shock prone areas covered. Limited ability to expand via non-government databases.	Registry/databases cover between 50 to 70% of potential population in need with somewhat improved data, particularly in shock prone areas, though Interoperability limited still and some fragmentation remains	Registries/databases mostly adequate across shocks: cover(s) most of the potentially impacted population with significant coverage of areas susceptible to shocks and high degree of data reliability and accuracy.	Registries/databases fully sufficient to respond to all shocks: Integrated social registry/ complete databases covering nearly all population and can be updated frequently on demand and used across multiple shocks.

3. Finance

Finance		
1	Does the Government have a national strategy, policy or legislation setting out commitments to disaster risk financing?	» No disaster risk financing strategy or policy document/s exist = 1 » Disaster risk financing policy document/s are under development, or if they exist are outdated and not linked to any ASP interventions= 2 » Some disaster risk financing policies or strategies exist but not backed by legislation or financial instruments = 3 » Disaster risk financing policy exists for at least one shock and some legislative / financial commitments in place = 4 » Clear disaster risk financing strategy exists for wide range of shocks with supporting legal / financial instruments in place that mention ASP interventions = 5
2	Does the government have ability to analyze and model the potential cost implications of the shocks identified in part 1 over time?	» No systems exist = 1 » No, but the government is actively building capacity in this area = 2 » Yes, an analysis has been performed based on historical data for a/some shock(s), including ASP scale-up plans = 3 » Yes, an analysis has been performed based on historical data as per ASP scale-up plans for some shocks and is owned by the Government = 4 » Yes, an analysis has been performed based on historical data as per ASP scale-up plans for all shocks and is owned by the Government = 5
3	Is financing in place to ensure a timely ASP response to disasters?	» No specific financing instruments earmarked, response fully dependent upon budget reallocation and external aid = 1 » Some disaster funding earmarked but fully dependent upon budget reallocation and external aid and not specifically for ASP response. Some coordination with development partners and ministries to access finance = 2 » Some financing instruments earmarked for ASP response to some shocks, but amount limited to smaller events/more regular scale-up. Where additional finance required this experiences delays = 3 » Some contingency financing and / or market-based instruments in place for some proportion of potential ASP costs. Larger and infrequent shocks not fully covered = 4 » Instruments are ear-marked to quickly cover the cost of ASP scale-up from all shocks. Minimal delays to response =5
	Are there systems/ mechanisms which can be utilized for ASP interventions? Note: while some systems may not have been established for the purposes of ASP they are able to act in this way if needed.	» No clear system/mechanism in place to scale up ASP assistance in place = 1 » Systems/mechanisms exist for final distribution of assistance in line with SP system – no upstream timelines or protocols exist. Systems to disburse and reconcile expenditure= 2 » Systems/mechanisms exist for the release of resources, but no clear timescales established and challenges in implementation remain. Systems to disburse and reconcile expenditure adequate = 3 » Systems/mechanisms and timescales for the release of resources exist but challenges in implementation remain. Good systems to disburse and reconcile expenditure down to beneficiary level = 4 » The processes and timescales exist for the release of all resources for ASP and good systems to disburse and reconcile expenditure down to beneficiary level = 5

Latent (1)	Nascent (2)	Emerging (3)	Established (4)	Advanced (5)
No government strategy, analysis or funding commitments for disaster risk finance, funding needs and allocation determined after the event with no guidelines on disbursement.	Strategy and costing analysis under development, no disaster risk finance instruments in place for ASP with funding needs determined after the event and requiring budget reallocation and vulnerable to delays.	Disaster risk financing strategy in place and some earmarked financial commitments for disaster response (including ASP) for some shocks.	Disaster risk financing strategy in place and earmarked financial commitments to ensure timely response, including a range of pre-positioned instruments for a proportion of potential ASP costs for some shocks.	Disaster risk financing strategy and portfolio of financial instruments regularly reviewed to provide full coverage of risk landscape and flexible to new shocks.

4. Institutions and partnerships

Government leadership

	Questions	Answers
1	Is there any government policy or strategy that recognizes the role of (adaptive) SP in disaster risk management? Is there any government policy or strategy that recognize (clarifies or centers) the role of SP in responding and recovering to covariate shocks (emergency preparedness and response, humanitarian response, crisis response	» No (A)SP or DRM strategy / policy =1 » Strategies / policies exist, but are outdated Or SP and DRM do not link to each other and ASP not mentioned=2 » Up to date strategies / policies exists with some recognition of the role of ASP in DRM (or vice versa) = 3 » Relevant SP and DRM strategies exist with strong complementarity and links to some legislation and fiscal commitments =4 » Clear and reinforcing commitment to ASP in SP and DRM strategies supported by appropriate legislation and fiscal commitments = 5
2	Is there a contingency plan* or response plan (whether drafted by the government or not, it is recognized as such in times of crisis), with links to risk assessment which determines the actions to be taken in case of one of the shocks identified in part 1?[77] Contingency plan will include human resource as well as technical, financial, and institutional capacity. This may require reviewing the adequacy periodically and adjusting the available resources/contingency plans accordingly (if a country is vulnerable to only 1 shock, score will be 5)	» No=1 » There is a plan, but it was never activated during a shock/not consistently activated OR there is a plan, but it is outdated and does not incorporate risk assessments=2 » There is an up to date plan which is/would be activated but does not have fully actionable implementation roadmap for an effective response and is not periodically reviewed nor tested=3 » There is an up to date, comprehensive and relevant plan for some shock(s), which includes risk assessment and scenario building which has been tested, is actionable and implementation-ready=4 » There is a plan for each/all shocks (including an action plan for unanticipated shocks), and clear guidelines as to when it is/would be activated and up to date and is tested/implemented regularly and refined = 5
3	How effectively[78] does the government lead the response plan[79] and implementation? The leadership of the government is independent of whether a contingency plan exists. This question seeks to understand what the actual role of the government is in the planning and implementation of response to a shock.	» There are no government led ASP activities – all is led by humanitarian partners without coordination with SP or DRM=1 » Government (SP and/or DRM) and non-governmental agencies run parallel ASP initiatives without coordination =2 » Government (SP and/or DRM) and non-governmental agencies run parallel ASP initiatives with ad hoc post disaster coordination =3 » Government SP and DRM have functioning institutionalized linkages and coordination (sharing data and information and coordinate on response based on respective roles) but no coordination with non-governmental agencies=4 » Government SP and DRM have functioning institutionalized linkages and coordination (sharing data and information and coordinate on response based on respective roles) and a coordination mechanism with non-governmental agencies is functional=5

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77 A plan refers to any strategy or policy document that delineates steps to deliver the response and covers areas such as source of identification of stakeholders (both public and private); financing; coordination between agencies and stakeholders; deployment or hiring of staff where needed; ways to horizontally or vertically expand the existing system; scenario building and assessments; integrates results of risk assessment and early warning system, etc.

78 Effectiveness is based on whether the government is able to meet its targets.

79 It refers to the process of planning after a shock hit. Which agency or partner takes the lead in planning and implementing the response?

Latent (1)	Nascent (2)	Emerging (3)	Established (4)	Advanced (5)
No strategy and/or ad hoc programming in place with no leadership role for the government.	There is a strategy or policy, which is mostly outdated. At the same time, the government has limited capacity to lead the response.	The strategy is outdated but government institutions are strong, which enable the government to take lead in response. However, role of SP and DRM are not clearly delineated.	There is an up to date strategy and policy in place which clear defines the role of SP and DRM in shock response. Government has the capacity to respond on most aspects of shocks.	Strong SP DRM strategy with government leading all aspects of response.

	Questions	Answers
1	Is there a public agency which is formally tasked with leading the shock response efforts (for the shocks identified in part 1)? (whether centrally or decentralized depending on where decision making occurs)	» No agency tasked =1 » No formal responsibility designated, but many agencies respond using their own systems and processes =2 » Several agencies tasked with response of some shock(s) (overlapping mandates) with limited level of coordination=3 » Clear responsibility and roles for some shock(s) assigned to agency(ies) though not for all shocks =4 » One agency tasked with shock response (or multiple agencies with designated roles and responsibilities) and covers all the shocks =5
2	Is there a coordination mechanism or institutionalized linkage between DRM (or institutionalized system responsible for shock response) and SP agencies (for the shocks identified in part 1)?	» No linkages: SP actors (or agency) do not have an active role and/or do not have coordination mechanism with DRM actors=1 » Ad hoc linkages (not institutionalized), OR coordination institutionalized but in reality, SP counterparts still struggle to coordinate with DRM counterparts=2 » Mostly functioning institutionalized linkages and coordination between SP and DRM for the some shock(s) only (SP and DRM counterparts share data and information and coordinate on response based on respective roles for some shock only) =3 » Mostly functioning institutionalized linkages and coordination between SP and DRM actors for most shocks =4 » Strong linkages and institutionalized coordination mechanisms between SP and DRM for all shocks=5

Latent (1)	Nascent (2)	Emerging (3)	Established (4)	Advanced (5)
Weak to non-existent institutional infrastructure for shock response with lack of assigned roles and responsibilities	Limited and unclear assigned responsibilities for some shock(s) and fragmented and weak coordination between SP actors and with DRM actors	Roles and responsibilities clearly assigned with some institutionalized coordination established particularly for some shock(s) though some overlap and gaps remain	Recognized roles and responsibilities of each agency to respond to the various shocks though some gaps and weaknesses remain (could be some overlap, delays, or missing actors)	Recognized roles and responsibilities for all shocks with strong coordination across all relevant SP and DRM actors without delays or any overlap