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CONTEXTUALIZING PROGRESS IN NUTRITION AND DIETS IN ZAMBIA

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INTRODUCTION

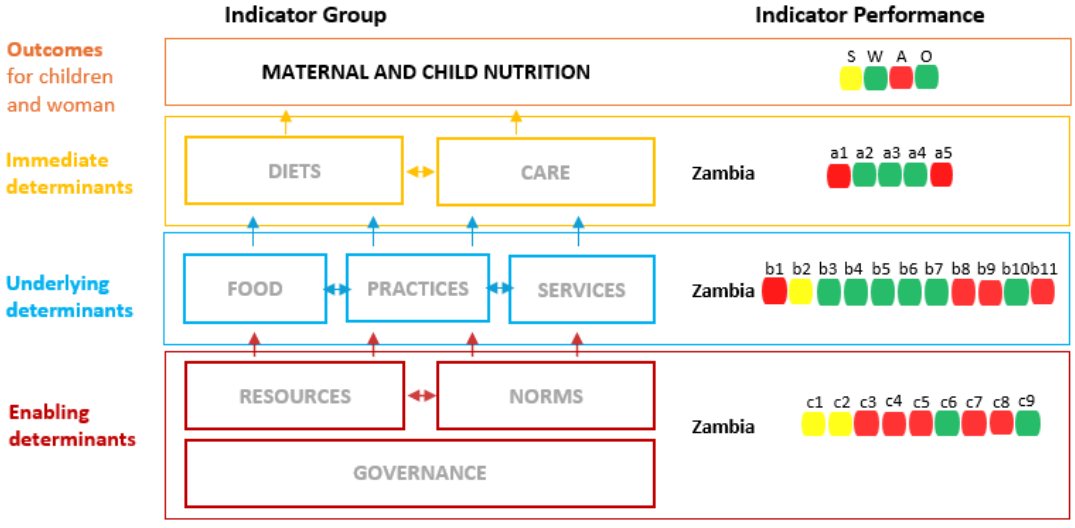
Malnutrition remains a major health concern in Zambia. Undernutrition, micronutrient deficiencies, and overnutrition, often referred to as the triple burden of malnutrition, persist and coexist despite numerous targeted efforts to reduce them.

The coexistence of these different types of malnutrition reflects a complex and evolving nutrition landscape. Causes of malnutrition are diverse, ranging from macro to micro level factors. We utilize UNICEF's Conceptual Framework on Maternal and Child Nutrition to analyze the determinants of malnutrition (1). Figure 1 provides an overall summary of the performance of the various determinants in Zambia. At the macro level, enabling determinants include socioeconomic, political, cultural, and environmental factors, which indirectly affect (mal)nutrition. These enabling factors shape the underlying determinants, including food availability and access, caregiver resources, and healthcare resources, which in turn influence immediate determinants like dietary intake, directly impacting nutrition outcomes for women and children.

Over the years, the determinants of malnutrition in Zambia have evolved, influencing the country's nutrition outcomes. While many have improved (cf. Figure 1), several have stagnated or deteriorated.

Here, we examine the trajectory of key nutrition indicators and contextualize them with the performance of both established and emerging determinants of malnutrition. These "emerging" determinants, are drivers considered important in recent literature but that have not (yet) been as thoroughly investigated as established determinants. This policy brief aims to deepen the understanding of the complex and interconnected factors shaping diets and nutrition trends and to inform policy design that addresses these challenges in the context of changing food systems and recurring global and economic shocks.

Figure 1: *UNICEF conceptual framework of malnutrition and key indicator performance between 2018 and 2024. Green = improvement, yellow = stagnation, red = deterioration*



S**: Stunting under 5, **W**: Wasting under 5, **A**: Anaemia in young children, **O**: Overweight in young children
***a1:** Excl. breastfeeding <6 mo; **a2:** Intro. of foods (6-8 mo), **a3:** Child. breastfeeding at 2 years; **a4:** Min dietary divers. (6-23 mo); **a5:** Min. meal freq. (6-23 mo); **b1:** Per capita dietary energy; **b2:** Protein supply; **b3:** Total fertility rate 15-49; **b4:** Age at first marriage; **b5:** Antenatal visits pregnancy; **b6:** Assistance during delivery; **b7:** Female sec. school attend; **b8:** Women who are literate; **b9:** Piped water at dwelling; **b10:** Pop. using open defecation; **b11**: Households with basic wash; **c1:** GDP growth; **c2:** GDP per capita; **c3:** Poverty; **c4:** Inflation; **c5:** Education exp.; **c6:** Health exp.; **c7:** Out-of-pocket health exp.; **c8:** Unemployment; **c9:** Literacy rate.*
**Based on the direction of change of indicators between the latest Demographic and Health Survey (DHS) rounds*
*** Based on the direction of change of indicators between the latest Joint Malnutrition Estimates (JME) rounds*

TRAJECTORIES IN NUTRITION INDICATORS

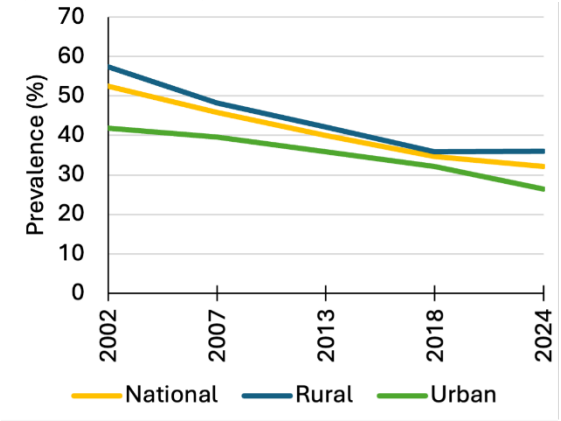
While wasting and stunting in children under 5 have improved over the last twenty years, progress has slowed down. Micronutrient deficiencies in women of reproductive age and overweight are on the rise, especially over the last ten years.

Stunting

In Zambia, stunting, defined as low height-for-age, declined from 53% in 2001–2002 to 35% in 2018 and further to 32% in 2024 (2,3), standing above the Southern Africa average of 24.1% and the Eastern Africa regional average of 31.2% (4). This indicates a slower rate of decline in recent years, corresponding to an average annual decline of 0.4 percentage points (pp) since 2018[1]. Zambia experienced El Niño droughts in 2014/15, 2018/19, and in 2024 and floods in 2022 which could have contributed to the slowdown in progress, in addition to global shocks (5).

Figure 2 shows that while progress has been made in urban areas, rural parts of the country have not seen a reduction in stunting since 2018.

Figure 2: *Stunting prevalence by context*



There are significant within-country variations: Despite an overall slowdown or reduction, several provinces in Zambia experienced increases in stunting rates between 2018 and 2024. These include Luapula, Muchinga, Eastern, Northwestern, and Copperbelt, with Luapula recording the highest rate at 45.3% (2). Muchinga also saw an over 10 pp increase in stunting from 32% to 43%, a reversal back to 2013 estimates. Other socioeconomic disparities also persist, as stunting is more pronounced among poor households and those with less-educated mothers.

Wasting

The number of children under 5 affected by wasting, defined as low weight-for-height, has declined since 2013 from 6.2% to 3% (2). This rate was lower than the African average of 5.4% and the Southern and Eastern Africa averages of 3% and 4.8% in 2024 (4). Wasting was higher among children aged 6-11 months and in rural areas (2.6%) compared to urban areas (2.3%), with the highest prevalence observed among those in the lowest wealth quintile (3.3%).

Micronutrient deficiencies

Anemia among women of reproductive age has stagnated. According to modelled estimates, the latest prevalence is at 27.1% in 2023 (7), up from 26% in 2014.

DETERMINANTS OF NUTRITION AND DIETS

Most enabling determinants have deteriorated over the past decade, exacerbating the low affordability of diets and limiting resources for nutrition. Underlying and immediate determinants have shown mixed progress.

Enabling determinants

Population growth has slowed, GDP per capita has risen slightly, and adult literacy has improved (8). The urban population has also been steadily increasing, reaching approximately 47% in 2023 (8). Health spending as a percentage of GDP and coverage of essential health services increased over recent years. However, several other enabling determinants have deteriorated: following

[1] This figure was obtained by calculating the average annual rate of change in stunting prevalence between 2018 and 2024, the survey years.

subsequent weather and global shocks, the country experienced rising unemployment and inflation, along with volatile GDP growth (8). The poverty headcount ratio increased from 60.4% in 2016 to 64.3% in 2022, indicating constraints in the ability to purchase healthy foods. Government expenditure on education - as a percentage of GDP- has also been on a downward trend from 4.7% (2018) to 3.6% (2024) further weakening literacy among women which fell to 66% (8).

Underlying and immediate determinants

Determinants such as total fertility rate, median age at first marriage, antenatal care visits, and skilled delivery have improved.

Infant and young child feeding indicators have shown mixed progress. Exclusive breastfeeding rates have declined slightly in recent years, while continued breastfeeding (12-23 months) improved and stood at 63% in 2018. Minimum dietary diversity among children increased but remains quite low at 25.9% in 2024, and meal frequency at 41.5% in 2018. About 65.1% of rural households and 22.4% of urban households could not afford the basic food basket (9). These factors contribute to poor growth outcomes. The minimum dietary diversity for women indicator shows that, 59.6% of women (15 to 49 years) consumed at least five out of ten defined food groups in the previous 24 hours in 2024 (9).

In 2022, the highest budget allocations for nutrition-sensitive interventions were reported in water & sanitation, food security packs, and strategic food reserves, collectively accounting for 78% of nutrition-sensitive allocations. Despite this, the country continues to witness a decline in WASH indicators. Between 2018 and 2024, the population using water piped into dwellings declined from 7.7% to 6.9% while households with a basic handwashing facility, with soap and water available are only 18.5%. Open defecation has generally improved with a rate standing at 6.4% (2,11).

Employment among women declined to 45% in 2018. Despite this, overall gender empowerment indicators have improved, reflected in more equitable attitudes toward gender-based violence and greater joint decision-making on major household purchases.

Emerging evidence on the food environment

Driven by increased urbanization and changes in food retail environments (10), African countries are witnessing an increasing number of supermarkets that has mixed effects on diets and nutrition outcomes. In Lusaka, two-thirds of households reported using both modern (e.g., supermarkets, fast-food outlets) and traditional retailers. Wealthier, more educated, car-owning, and female-headed households are more likely to use modern

retailers (11). While this is a major factor shaping food access, it is less certain how exactly. Studies from Zambia emphasize the following evidence:

The Role of the Food Environment

Supermarket use is linked to higher consumption of ultra-processed and animal-source foods (meat, dairy, fish), and lower consumption of unprocessed foods (11).

Both modern and traditional retailers were linked to higher intake of unhealthy food groups (sugar, sweets, fats) (11).

Increased food expenditure in modern retailers was associated with a higher BMI and increased risk of overweight and obesity among adults (12).

Among children, no association with overweight was found, but a positive association with height-for-age was observed, suggesting improved linear growth (12).

Modern retail use correlated with higher dietary diversity, protein, and micronutrient (iron, zinc, vitamin A) intakes, primarily through increased consumption of meat and dairy (12).

The nutritional benefits of supermarket access were more pronounced among individuals from poor households. Modern retailers also contribute to higher consumption of ultra-processed foods and calories (12).

Multisectoral efforts to reduce stunting

The Government of the Republic of Zambia, through the Scaling Up Nutrition (SUN) initiative, launched the First 1000 Most Critical Days Programme (MCDP). The program aims to deliver high-impact interventions to reduce stunting among children under two years of age (13).

The first phase (2013–2017) covered 15 districts, while the second phase (MCDP II) began in 2018 and expanded from 30 to 42 districts by 2022 (13). The 2022 midline report assessed several indicators and found mixed progress across key determinants of stunting. Household production and consumption of nutritious crops and livestock declined. Dietary diversity worsened among women and children, with declines in minimum meal frequency and minimum acceptable diet, while food insecurity rose in urban areas. Although early initiation of breastfeeding improved, exclusive breastfeeding decreased with the child's age, and the timely introduction of complementary foods declined (13).

Access to basic drinking water and improved sanitation increased, alongside better water treatment practices, though safe storage and essential hygiene behaviours remained weak. Stunting risk was higher among children of younger mothers and tended to rise with age. District level analysis showed that districts with improvement on more than five indicators of determinants were likely to have reduced stunting prevalence. These indicators were minimum dietary diversity for women, minimum meal frequency for children, child dietary diversity, access to basic drinking water, and access to basic sanitation facilities (13).

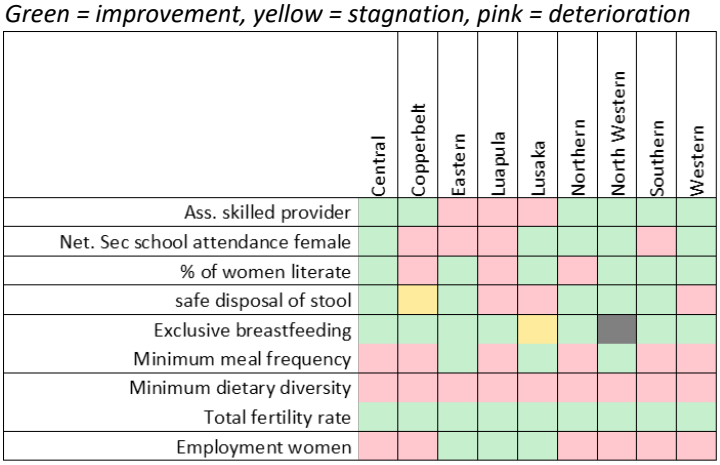
Some studies have identified long-term risk factors for stunting using DHS data from 2001 to 2018, the authors found that the key predictors of malnutrition were low birth weight, poverty, rural residence, diarrhea and fever episodes and maternal education (14)

Using DHS data, this brief also examines the changes in conceptual determinants between 2007 and 2018 by province summarized in figure 3 (provincial 2024 DHS results were not available at the time of analysis). Since 2007, all provinces have improved their stunting rates, but there was particularly strong progress in Central province, with a stunting reduction of 20.2 percentage points between the 2007-2018 periods (3,15). Over the same period central province also showed improvements in access to skilled birth attendance, maternal education, sanitation, exclusive breastfeeding and total fertility. These could point to important drivers to target for improvements in nutrition outcomes over the long run. Based on long-term DHS data, we find that maternal education and improvements in water and sanitation have emerged as key long-term drivers of better nutrition outcomes, particularly in reducing stunting.

CONCLUSION

Zambia has made progress in reducing stunting and wasting, but national averages remain above regional levels and disparities persist. Stunting has increased slightly among children aged 24–35 months, and some provinces still record rates as high as 45%. Rural and poorer households, as well as those with less-educated mothers, experience worse nutrition

Figure 3: Changes in conceptual determinants of nutrition (2007-2018) by Province
Green = improvement, yellow = stagnation, pink = deterioration



outcomes, while overweight, obesity, and anemia are rising among urban and wealthier women.

The current stagnation in nutrition is happening in a time of polycrises, with many factors such as the climate, COVID-19 pandemic, and conflict recently putting stress on the national economy. In the Zambian context, this research suggests that progress is slowing alongside a deterioration in the enabling determinants: slow and volatile GDP growth, rising poverty and unemployment, and high inflation have constrained household incomes. With limited government support for adequate nutrition, progress on improving malnutrition may slow down further. Emerging food system changes (e.g., expansion of supermarkets) are improving child nutrition and micronutrient intake but are also linked to rising adult overweight and obesity, particularly in urban areas.

POLICY RECOMMENDATIONS

Based on this assessment, this policy brief presents a set of policy recommendations to enable policymakers improve diets and nutrition outcomes in Zambia.

Address socioeconomic and structural inequalities and strengthen resilience to shocks by expanding nutrition sensitive social protection measures that target low-income households to mitigate the effects of economic shocks, inflation, and rising poverty on household nutrition.

Promote the role of food environments: modern and traditional retailers play a major role in accessing nutrient-dense foods for vulnerable groups, but they are also a hub for unfavorable foods. Emerging evidence suggests that regulating the marketing and availability of energy-dense pro ducts, coupled with nutrition education and support for access to healthy alternatives can improve child growth and prevent rising rates of overweight and obesity.

Promote WASH interventions: Reverse declines in access to piped water, handwashing facilities, and sanitation by investing in community-based WASH infrastructure and hygiene promotion. Integrate WASH improvements with nutrition programs to reduce disease-related undernutrition.

Improve enabling determinants: combat rising poverty as the poverty headcount ratio is rising, target unemployment and inflation that ultimately limit food affordability and accessibility.

Continue and elaborate on securing progress made in the immediate and underlying determinants.

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For full list of references, methods and detailed discussion, please refer to the forthcoming discussion paper “Assessing progress in malnutrition amid crises in Zambia, Malawi, and Kenya: Regional and country-level insights”, available at zef.de.

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