

Introduction – Turning Rapid Growth into Meaningful Growth: Sustaining the Commitment to Nutrition in Zambia*

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Abstract Zambia suffers high levels of child stunting and is struggling to achieve the nutrition-related MDGs, with significant constraints in the provision of services to address every one of the underlying determinants of undernutrition. Motivated by increasing advocacy for nutrition under the Scaling Up Nutrition (SUN) movement, the Zambian government pledged in June 2013 to cut chronic malnutrition by half over the next ten years. The country has come some way recently in creating coherent policies and strategies for nutrition, and has had some notable successes. However, important challenges remain, not least in coordination, capacity, finances and evidence. This article argues that if these challenges are to be met, political attention is not enough. Sustained focus and country ownership are needed to implement the necessary nutrition programmes across sectors, and real political and system commitment to reducing the number of malnourished children in Zambia is required in order to translate recent interest into impact.

1 Introduction

The level of undernutrition in Zambia is high and persistent. The increasing commitment of Zambian and international stakeholders to changing this situation holds out the prospect of real declines in undernutrition over the coming years. In addition, the current strong growth of GDP per capita is potentially a positive driver of future undernutrition declines. Despite these increased opportunities for undernutrition reduction, however, there are several real threats to progress. Based on a combination of research evidence and long experience of working in the country, the authors in this *IDS Special Collection* describe some of these opportunities and threats in Zambia and suggests ways of seizing the former and dealing with the latter.

This article is intended to provide an overview of undernutrition in Zambia and research and action being undertaken to tackle it. First, the article summarises the nutrition situation in Zambia. Second, we describe the current promising context for malnutrition reduction, focusing on government commitments, partner support and the growing economy. Third, drawing on the articles in this *IDS Special Collection*, we highlight some of the nutrition-relevant actions that seem to be reducing undernutrition. Fourth, we identify some of the key risks for future progress and draw out implications for action. Finally, we identify knowledge gaps where more evidence is needed if opportunities are to be seized, risks minimised and undernutrition reduction accelerated.

2 Nutrition in Zambia

The major nutritional problem in Zambia is child stunting (low height-for-age). With 45 per cent of children under five stunted (including 21 per cent severely stunted) (CSO *et al.* 2009), short stature is commonly perceived as the norm rather than the result of chronic undernutrition. While there are some signs that rates of stunting have

declined in recent years (from a high of 58 per cent in a 1999 Multiple Indicator Cluster Survey (MICS) to 45 per cent in the most recent Demographic and Health Survey (DHS)), over the long term, rates are little changed (46 per cent in the 1992 DHS, for example). Stunting rates reach 33 per cent even in the upper income quintile, which suggests that while we do not have to fix inequality before we reduce stunting, if we want to reduce stunting for the poorest populations we have to do it deliberately with nutrition programming, and systematically address underlying determinants of undernutrition (UNICEF 2013).

Stunting rates are significant even in newborns, increase dramatically to around age two and remain high through childhood and beyond (CSO *et al.* 2009). The level of stunting is linked to size at birth, so attention to nutrition in-utero is important. The first 1,000 days from conception to age two are known to be critical in prevention of stunting (Black *et al.* 2013) and are now the focus for most nutrition programmes. Other key nutrition indicators are also poor: rates of underweight (weight-for-age) and acute malnutrition or wasting (weight-for-height) are little changed at 15 per cent and 5 per cent respectively (CSO *et al.* 2009). Underweight is also a nutritional problem in women, with 9.6 per cent of women moderately or severely thin for their height; but twice that number are now overweight (19.2 per cent), reflecting a changing pattern of food consumption, particularly in urban areas where 29.6 per cent of women are overweight or obese (CSO *et al.* 2009).

Micronutrient malnutrition had not been measured in Zambia for decades at a population level, until a survey in 2013 to assess vitamin A, iron, zinc and vitamin B12 status of women and children in two provinces (NFNC 2013). Micronutrient deficiencies were found to be high: 15 per cent of children under five are zinc deficient, 20 per cent

are vitamin A deficient (though this appears to have reduced by almost 50 per cent in a decade), 21 per cent are iron deficient (with 56 per cent anaemic), and 87 per cent are deficient in vitamin B12. In women, iron deficiency and anaemia rates are high, especially during pregnancy, at 19 per cent and 42 per cent, respectively; zinc deficiency is also high but varied significantly between provinces at 28–70 per cent; and 95 per cent of women are deficient in vitamin B12.

3 Prospects for undernutrition reduction

Two factors are common to most documented sustained reductions in undernutrition: broad-based economic growth and wisely allocated increases in resources for nutrition-specific and nutrition-sensitive programmes (e.g. Haddad *et al.* 2014 for Maharashtra; Headey *et al.* 2014 for Bangladesh; O'Donnell *et al.* 2009 for Vietnam; and Monteiro *et al.* 2009 for Brazil).

The Zambian economy, bolstered by mining revenues and therefore linked to international mineral prices, is currently strong; GDP is growing fast, at around 5–7 per cent per year for the past six to seven years, and in 2012 the World Bank declared the country 'middle-income' (World Bank 2012). However, this growth is highly uneven: while urban poverty has dropped significantly over the past 20 years (40 per cent to 26 per cent since 1996) and there is an affluent and growing middle class in the country, rural poverty is unchanged (at around 78 per cent, with signs that this is worsening in some rural pockets), and the share of income captured by the bottom fifth of the population low and stagnant (3.6 per cent since 2004, one of the lowest figures in sub-Saharan Africa) (World Bank 2014b). Inequality is therefore an urgent problem in Zambia, and helps explain why overall income growth does not quickly translate into poverty reduction. This makes it even more important that there is a good nutrition strategy in place; efforts to reduce chronic undernutrition are not getting as much help from general economic growth as they would be in many other contexts. It also makes it imperative that nutrition scale-up is inclusive of those at all levels, particularly the most nutritionally and economically vulnerable, because equity is not built into the structure of the economy.

A precursor for wisely allocated increases in nutrition spending is increasing commitment from Zambian stakeholders to undernutrition reduction. The trend here is promising; for example, in June 2013 the Zambian government pledged to cut high levels of chronic malnutrition in the country by 50 per cent over a period of ten years to 2023. The statement was made by the Vice President of the Republic Guy Scott in front of a global audience at the Nutrition for Growth conference in the UK (Nutrition for Growth 2013). Specifically, the government pledged to fill human resource and financial gaps for nutrition in key line ministries;¹ increase government nutrition expenditure to US\$30 per child under five, including a minimum 20 per cent annual budget increase; encourage private sector involvement in production of nutritious foods; and strengthen government governance and coordination mechanisms, including direct oversight by the Vice President and strengthening of the National Food and Nutrition Commission (NFNC)

(Nutrition for Growth 2013). This is an ambitious agenda, but one that addresses many key challenges identified in and by the country.

This important government pledge came after two years of increasing advocacy for nutrition following the signing of Zambia as an 'early riser' country to the SUN (Scaling Up Nutrition) movement in early 2011, seen as a sea-change for nutrition for the country. However, building and sustaining commitment is not a quick-win, and improving and implementing policies and laws is an ongoing process. Pre-2011, Zambia did not score well on various indices constructed to measure nutrition commitment and governance, ranking mid-to-end of various lists assessing national policy commitment and governance (Engesveen *et al.* 2009); the legal framework and undernutrition situation (ActionAid 2010); and an index derived from legal frameworks, government expenditure, and policies and programmes (te Lintelo *et al.* 2013). Nor did Zambia fare well in two governance studies assessing intersectoral coordination and resourcing for nutrition, both of which were found to be inadequately addressed (Taylor 2012; Harris and Drimie 2012). In sum, Zambia has a favourable economic outlook, and nutrition is attracting much attention internationally which appears to have translated into attention from the national government. But it is known that attention, even from high-level politicians, is insufficient to drive action; real political and system commitment is necessary to translate interest into impact (Pelletier *et al.* 2011).

4 Nutrition-relevant actions that appear to be effective

Here we draw on the articles in this *IDS Special Collection* as well as previously published research. We use the phrase 'appear to be effective' because while many of the initiatives described seem to have positive effects, very few of them have been subjected to rigorous impact evaluations, a point we return to later in this article.

In the past, Zambian nutrition policy has been described as 'essentially wish-lists noting best practice, confined mainly to the health sector, created with substantial input from external actors, and without the backing of political commitment, budgetary or human resources, or capacity' (Harris and Drimie 2012). However, Zambia has come some way over the past three years in creating coherent policies and strategies for nutrition, and does have some notable successes in policy interventions (noted in the following sections), particularly in micronutrient nutrition; integration of nutrition actions into the policies of sectors other than health is slower, but there are signs of tentative action.

Government attention to reducing malnutrition in Zambia dates back to 1967, when the NFNC was established as a statutory Board through the National Food and Nutrition Act. This Act recognises the right to good nutrition and nutrition services, and mandates the NFNC to promote food and nutrition activities and to advise the government accordingly. The Act of 1967 was amended in 1975 to include provision for the set-up of community nutrition groups and their registration with the NFNC, and plans are under way in collaboration with the World Bank for a further revision aimed at strengthening the NFNC, which may place it under the Office of the Vice President.

Nutrition is recognised in overarching development policies and strategies such as the 2002 Poverty Reduction Strategy Paper (PRSP), Zambia's 'Vision 2030', and the Sixth National Development Plan (mostly identifying nutrition as an important input into social and economic development). A series of nutrition policy and planning documents has emerged from these strategies (Harris and Drimie 2012). The 2006 National Food and Nutrition Policy (NFNP) articulates a policy framework built upon the nutrition gaps highlighted in the PRSP, with a vision of achievement of optimal nutritional status for the Zambian population, and recognition of food and nutrition security as a right. To operationalise the NFNP, the National Food and Nutrition Strategic Plan 2011–15 (NFNSP) takes a multisectoral focus on child stunting and the first 1,000 days, and articulates programme components including communications, advocacy and a monitoring and evaluation framework.

4.1 First 1000 Most Critical Days Programme

Recognising that funding the full NFNSP would be a challenge, attention was focused on one key aspect of the Plan. In April 2013, Zambia officially launched the NFNSP together with the First 1000 Most Critical Days Programme (MCDP) under the leadership of the NFNC and the Ministry of Community Development Mother and Child Health (MCDMCH, identified as the lead implementing ministry) with substantial input and support from the international community.

The MCDP is a national programme and has received endorsement by the ministers of each of the five key line ministries. In essence, the MCDP operationalises the multi-sector Strategic Direction 1 of the NFNSP that focuses on the first 1,000 days of life. The programme is organised under five strategic areas: (1) policy and coordination to strengthen stewardship, harmonisation and coordination; (2) priority interventions that require national scaling up across sectors to reduce stunting; (3) institutional and capacity building; (4) communication and advocacy; and (5) monitoring, evaluation and research. Implementation is starting in 14 districts with high poverty and stunting rates, and aims to achieve significant impacts by 2015, to leverage further resources and support national scale-up.

Although the MCDP is costed, government is not yet providing full financial support for its implementation; initial programme funding is being prioritised through the SUN Fund, a joint financing mechanism aimed at promoting harmonisation and alignment of financial support for nutrition among key partners, stakeholders and government with the intention of avoiding duplication of efforts, as well as reducing transaction costs for all partners (DFID *et al.* 2014). Activities under the MCDP to date are numerous,² but implementation of the MCDP on the ground across sectors is in its early stages, with some notable successes³ and challenges.⁴ It is recognised that the NFNC, being the institutional home of the MCDP, has a significant role in monitoring and oversight of the programme's delivery, and for coordinating all stakeholders including those supporting the programme outside of the SUN Fund, but NFNC capacity remains an issue.

4.2 Food fortification and supplementation

The two major food fortification strategies in Zambia are iodised salt and vitamin A fortified sugar. Salt has been iodised in Zambia since the 1970s, and currently salt is fortified at 15–40 parts per million. Historically, levels of Iodine Deficiency Disease (IDD) have been high (NFNC 1995), but more recent surveys have found positive impact of fortification, and average iodine levels are no longer a major public health concern (NFNC 2003, 2012). While the salt fortification programme has been highly successful in combating IDD, the levels of iodisation of salt observed in both impact surveys raised another concern – only 53 per cent of the population in 2011 was accessing adequately iodised salt (NFNC 2012) – short of the World Health Organization indicators for Universal Salt Iodisation of above 90 per cent of households (WHO 2007) – and measures are now under way to strengthen quality control, regional level harmonisation, advocacy and communication, and social marketing. The vitamin A programme started in 1998 with the mandatory regulation on sugar fortification also being established in the same year (Serlemitsos and Fusco 2002). At the time when sugar fortification began, it was estimated that about 50 per cent of the population was accessing the fortified sugar. However, the Living Conditions Monitoring Survey of 2006 indicated that about 60 per cent of the population was accessing fortified sugar. This may suggest that vitamin A sugar fortification programme coverage has improved and may be contributing to reductions in vitamin A deficiency seen in Zambia. Biofortification of 'orange' maize has been shown to increase vitamin A intakes among rural Zambian children compared with typically-consumed white maize (Nuss *et al.* 2012). These varieties are currently being disseminated in Zambia by Harvestplus and limited quantities are available in local supermarkets. Other biofortified food crops available in Zambia are beans with high content of iron and zinc, and orange sweet potato with high levels of pro-vitamin A. Impact of these innovations on the nutrition status of the vulnerable groups are too early to determine.

Vitamin A and iron supplementation programmes are well established in Zambia. Vitamin A supplementation is carried out twice-yearly during Child Health Weeks, involving intensified social mobilisation and service delivery over a few days, at no cost to the community. Data from programme monitoring shows coverage of vitamin A supplementation improving over recent years, reaching over 80 per cent (MOH 2012). It has been difficult to assess to what extent reductions in mortality can be attributed to this programme. Iron folate for pregnant women is provided through antenatal care; in 2007 about 43 per cent of pregnant women were supplemented (CSO *et al.* 2009), though there are issues with compliance and late start, as many women go for their first check-up after three months of pregnancy. Schoolgirls aged 12 years are supplemented with iron under the School Health and Nutrition Programme. There is no deliberate policy to address iron deficiency in young children through focused supplementation, though the provision of de-worming tablets to infants and young children aged 12–59 months of age during Child Health Weeks is established and may contribute to reduced anaemia, with around 80 per cent coverage. Piloting of micronutrient powders for children is

under way in one district with support from UNICEF and if successful, this intervention would be scaled up through the SUN Fund and other resources. Masuda and colleagues (this *IDS Special Collection*) contribute an assessment of spirulina algae as a complement to current supplement regimes, finding some positive results on height-for-age z-score from this locally produced resource.

4.3 Education, agriculture and social protection

There have also been some positive steps in sectors outside of health. The predominance of starch-based diets with little variation or nutrient-density is a key underlying factor determining the level of child malnutrition in Zambia. The Ministry of Agriculture and Livestock (MAL) supports a food-based approach to nutrition improvement, and has a set of Food and Nutrition Operational Guidelines (MACO 2008). However, in practice agriculture sector policy drives production of a national supply of maize, with very little room for the promotion of other produce, including foods that are more nutrition-dense and therefore can improve child diets (Harris and Drimie 2012). The share of agricultural budget allocations to direct input subsidy programmes to support maize production under the Farmer Input Support Programme (FISP) and the Strategic Food Reserve of the Food Reserve Agency (FRA) accounted for 73 per cent of the total approved MAL budget for the Sixth National Development Plan (SNDP) and, as a result, very little funding has been available for the MAL's core functions (Ministry of Finance 2012), let alone for promoting agricultural diversity or other nutrition-sensitive work. Recent work under the Comprehensive Africa Agriculture Development Programme (CAADP), to which Zambia is a signatory, has encouraged southern African countries to incorporate nutrition into National Agriculture Investment Plans (NAIPs), which dictate the allocation of funding within agriculture ministries. Zambia has been successful in writing some nutrition-sensitive sections into their NAIP, including the beginnings of a diversification of crops supported under the national input subsidy programme (FISP).

In education, Zambia has witnessed the convergence of two parallel school feeding programmes in creating the Home Grown Feeding Programme (HGFP). From an initial caseload of 320,000 children, the programme reached 850,000 children across 31 districts in 2011 (WFP 2013). The future HGFP aims to achieve financial sustainability through the eventual ownership and funding by the Zambian government, and should involve the cooperation of various ministries. The positive impacts of the school feeding programme are thought to act through the relationship between a child's nutritional wellbeing and health to that of increased school enrolment, attendance and overall academic performance, with a spillover effect in the agriculture sector where higher production and access to markets can have an impact on community development.

There has also been a major policy shift by the Zambian government to expand the Social Protection Programme, with efforts under way to make it more nutrition-sensitive and encourage grass-roots engagement with women in particular. In the 2014 national budget, government more than doubled the budgetary allocation to support Social Cash Transfer and Child Grant Schemes (Ministry of

Finance 2012). Seidenfeld and colleagues (this *IDS Special Collection*) investigate the impact of Zambia's expanding Social Cash Transfer Programme on child nutrition, finding that the transfers have positive impacts on key underlying factors such as food security and dietary diversity, and on height in sub-groups with access to clean water and more empowered mothers. The authors suggest that the scale of the cash transfer programmes provides an unprecedented platform on which to deliver nutrition-sensitive programming. Targeting the cash transfers to households with pregnant and lactating women would potentially yield large benefits given the importance of the first 1,000 days period. Another form of local-level cash transfer was investigated by Kawana and colleagues (this *IDS Special Collection*), assessing whether cash or food transfers improved the nutritional status of people living with HIV, and finding some improvement in Body Mass Index, Household Dietary Diversity Score, antiretroviral therapy (ART) adherence, and mean CD4 count in both treatment groups. There was no significant difference between groups, however, and no control group against which to assess these changes.

Several other articles in this *IDS Special Collection* detail experiences with programmes aimed at addressing key determinants of malnutrition in Zambia. Mulenga (this *IDS Special Collection*) describes a programme based on the Positive Deviance model for children at risk of moderate and severe underweight, citing variable outcomes in terms of catch-up growth over a year after a household completes the programme, and noting several lessons for implementation and follow-up quality that may inform future interventions. Finally, Moramarco and colleagues (this *IDS Special Collection*) describe an integrated project comprising in-patient and community-based treatment for severe malnutrition, linked to home gardening activities for households presenting with malnourished children, and capacity building for health centre staff, that might inform future programme models.

5 Risks to undernutrition reduction

This section outlines four sets of risks identified through the literature and from country experience: stakeholder coordination, capacity gaps, funding gaps and evidence gaps.

5.1 Stakeholder coordination

Chilufya and colleagues (this *IDS Special Collection*) working with Zambian civil society reflect on processes undertaken since 2011 to build political commitment in the context of the SUN movement in Zambia, and the SUN-CSO Alliance's roles in strategic advocacy, accountability and capacity building of key political actors. The authors note that while important steps have been taken to build political commitment, and the profile of nutrition has certainly been raised in Zambia, issues around funding and attention to effective intersectoral coordination remain a drag on implementation. These challenges go beyond intersectoral coordination alone but also affect *intra*sectoral coordination – vertical coordination within ministries, and among different groups working within the same sector – as well as coordination among donors, the UN system and other agencies supporting nutrition in the country. Drimie and colleagues (this *IDS Special Collection*) document one particular process whereby local-level ministries are

brought together using new structures and intensive capacity building to engage multiple sectors for nutrition, focusing at district level as a context where sectoral siloes are less rigid. The innovation the authors report is based on a process of understanding, trust-building and commitment that is slowly translating into altered systems for intersectoral nutrition action. Seco Grütz and colleagues (this *IDS Special Collection*) from the donor community echo civil society's call for further financial and human resources and coordination between sectors, and reflect on the role that the donor community has played and lessons learnt for generating commitment and action in a context where nutrition has been a largely neglected issue. They conclude that the last three years of advocacy and planning has laid a strong foundation on which to build nutrition action, but that challenges remain around shifting from a curative to a preventative approach by bringing in other sectors such as agriculture and local government to the nutrition agenda and demonstrating results.

The need for coordination is vital, because different ministries and sectors need to do things differently to support a sustained and rapid decline in undernutrition rates. Nonetheless, Zambia will reap greater benefits by defining and strengthening the implementers and delivery channels for the most effective nutrition interventions. Below we describe some issues in food production, care provision and the health environment which are likely to be holding back intersectoral undernutrition reduction efforts.

Currently, food security in Zambia is very much equated with staple food production, particularly maize, with a majority of agriculture funding going to two major schemes to grow and procure just a few staple crops, and therefore crowding out diversification into more nutrient-dense food crops or animal foods (Harris and Drimie 2012). In turn, diets in Zambia are monotonous and traditionally based on *nshima*, a thick starchy porridge made from maize or other staple crops, eaten with a small amount of 'relish' of a few basic vegetables sometimes supplemented with a little meat, beans or fish; intake of nutrient-rich foods is seasonal and amounts of these foods often minimal. Complementary foods are introduced early to Zambian children, and these are dominated by starchy staples; both feeding frequency and food diversity are generally low, and only 37 per cent of Zambian children aged 6–23 months are fed in accordance with agreed best practices (CSO *et al.* 2009).

Ways therefore need to be found to make agriculture and food systems more nutrition-sensitive, alongside promoting better diets. One way of doing this is to decrease the price of more nutritionally valuable foods. In this *IDS Special Collection*, Chibuye assesses the impacts of the 2008 food price crisis on child attained height-for-age (HAZ); findings are mixed but in general stunting is quite sensitive to a wide range of food prices, suggesting that initiatives to reduce the prices of nutritious foods will improve stunting. Two further articles highlight other ways of restructuring food production. Longley and colleagues (this *IDS Special Collection*) note that despite the nutritional and cultural importance of fish in the Zambian diet, there is currently inadequate year-round supply from wild and farmed sources to meet the nutritional needs of all Zambians, and there is a lack of understanding of the

potential contribution of different fish prepared in different ways to diets in the first 1,000 days. Ismail and colleagues (this *IDS Special Collection*) present data on the issue of aflatoxin contamination of maize and groundnuts, and evidence for an impact on stunting; the authors note that little is known about the extent of the problem – either contamination levels or their effects – in Zambia due to a lack of testing, but studies from similar contexts suggest that if the different sectors involved cannot come together to understand and address it, the health impact could be significant.

In terms of care practices, more than 95 per cent of children in Zambia are breastfed directly after birth (CSO 2012), but exclusive breastfeeding during 0–6 months accounted for 46.7 per cent in 2010 (*ibid.*), increasing the risk of diarrhoeal diseases early in life; almost a third of children aged 6–23 months had a diarrhoeal episode in the past two weeks in the most recent survey (CSO *et al.* 2009). One potential reason for poor care practices may be the status of women and mothers' empowerment to make care decisions; many of these indicators are poorer in women with less education (CSO *et al.* 2009). Sixteen per cent of women are estimated to be infected with HIV, with ART coverage in adults standing at around 90 per cent; mother-to-child transmission and overall HIV rates in children under 14 are both declining, but only 28 per cent of infected children are currently receiving treatment (National AIDS Council 2012). Vaccination coverage is low at 68 per cent of children aged 12–23 months; 6 per cent of children do not receive any vaccinations (CSO *et al.* 2009), and levels of infection such as malaria and respiratory illness are high, impairing nutrient utilisation and impacting nutrition (NFNC 2013).

On the health environment, the health system itself is weakened by inadequate financial and human resources (MOH 2009), and provision of basic services such as water and sanitation is poor, particularly in rural Zambia where 50 per cent of households have access to safe drinking water; in urban areas this figure stands at 84 per cent (CSO 2012).

Overall, then, there is a difficult environment for improving nutrition with so many key areas that need to be addressed simultaneously by coherent and joined-up policy and programming.

5.2 Capacity gaps

The capacity of the nutrition-related workforce and resourcing of nutrition-related programmes has been recognised by government, donors and the nutrition community in Zambia to be an important impediment to progress (THET 2012). For example, within the Ministry of Health (MOH) there are positions for nutritionists at each level; however, not all of these positions are filled. The National Health Strategic Plan in 2005 noted that 65 out of a recommended 200 nutritionist positions at all levels were currently in post (MOH 2005), and this has not improved; a 2009 government analysis showed that 68 out of 72 districts operate at less than 50 per cent of staffing levels required to meet the basic health needs of that district's population (MOH 2009), and a more recent plan again calls for higher levels (MOH 2011).

The newly established cadre of Community Health Assistants (CHAs), front-line health workers who are trained for a year in a range of maternal and child health issues, including nutrition, is a promising development. However, a current recruitment freeze and the time needed to train a critical mass of CHAs, means that Zambia will also need to rely on other cadres of front-line workers to deliver nutrition counselling. As shown by countries like Ethiopia with its health extension workers, and Bangladesh with its network of community health workers and volunteers, this will require significant efforts and resources to train, supervise and incentivise front-line workers in order to ensure quality nutrition services (Baker *et al.* 2013). In Zambia, results-based incentives for front-line workers and national workers to support district counterparts are being explored as part of new health and nutrition programmes.

Most higher-level nutrition training in Zambia has been at diploma level and biased towards food science and technology, and many nutritionists have been found to be more comfortable with food production, processing and preservation than with the range of underlying and basic-level causes of malnutrition. In response to this gap, a new BSc nutrition degree has been introduced at the University of Zambia (UNZA) and is being funded initially by the UK Department for International Development (DFID); more than 40 students are currently enrolled, with plans to increase intake of new students annually. The aim is to create a new cadre of more highly qualified nutritionists who could fill much needed gaps at implementation, policy and planning levels. The SUN Fund has agreed to provide further support to help consolidate the BSc and establish an MSc for future teaching sustainability. In addition, a nutrition workforce planning exercise is under way to help determine how many nutritionists and dietitians Zambia should have at different levels of the system, and how it can gradually fill the current gaps in line with SUN commitments; this should include filling gaps in ministries other than health.

5.3 Financial gaps

Weak financial tracking and resource mobilisation for nutrition from various government, donor and non-governmental organisation (NGO) sources continue to be an impediment in determining and securing finances needed to support nutrition at country level. Challenges that require attention include increasing domestic financing to leverage external support from donors; improving information on nutrition financing to inform policymakers on how resources should be allocated and ensure that investments in nutrition are consistent with the country's accelerated development agenda; and better tracking procedures for resources in relevant line ministries at national and sub-national levels to ensure transparency and accountability in the delivery of programmes for nutrition. To date, there has been no single comprehensive mechanism that would help to provide and track financial flows through nutrition interventions in the country. This gap has been recognised and some donors in Zambia have agreed to pool such support through the SUN Fund in addressing undernutrition. In addition, the global SUN is working on a methodology for countries to track nutrition-specific and nutrition-sensitive spend.

Currently, public funding for government programmes is prioritised through sector-specific Medium Term Expenditure Frameworks (Ministry of Finance 2014). The overall budget for nutrition-specific interventions has increased significantly as a result of a recent increase in the health budget with re-organisation of health services under the ministries of health and community development. The current allocation to the health sector from the government in 2014 is ZMW4.5 billion (approx. £450 million), which is a 29 per cent increase (about ZMW1 billion) from 2013. The specific budget allocation for nutrition (Infant and Young Child Feeding (IYCF) and Integrated Management of Childhood Illness (IMAM)) for 2014 is ZMW355,455, which is inadequate to implement the MCDP programme.

The budgetary allocation to the NFNC has been increased 35 per cent (*ibid.*), mainly as a result of the rationalisation and harmonisation for the terms and conditions of service for grant-aided institutions under the MOH. It is more difficult to assess nutrition-sensitive budgets, as budget lines are not allocated specifically to nutrition. As an example though, the budgetary allocation in 2014 to the Social Cash Transfer (SCT) increased by 140 per cent as compared to the 2013 budget (Platform for Social Protection Zambia 2014). This is an encouraging investment by government to expand the coverage and distribution of this protection to poorer groups, who are also those most vulnerable to poor nutrition. It is yet to be seen how the benefits of the SCT will be translated at ground level and to impact in reduction of undernutrition in these populations.

5.4 Evidence gaps

The articles from this *IDS Special Collection* and from elsewhere suggest some gaps in our understanding that are constraining action. First, it would be useful to derive some Zambia-specific estimates of the economic benefit of investing in nutrition. This is important because it is clear that Zambia lies within a policymaking environment where economic growth is the central metric of government attention. For example, in the African Development Bank (AfDB) latest report (AfDB Group *et al.* 2013), the section on Zambia does not mention nutrition once. Hoddinott *et al.* (2013) estimate such returns for eight sub-Saharan African countries, but not Zambia, and conclude that the median benefit cost ratios of such investments are approximately 1:15. These kinds of estimates can help make the case for nutrition on economic grounds, supporting the case made on a health and rights basis. These investments also help improve the quality of economic growth, ensuring that it is sustained and translates into human wellbeing outcomes. Investments in nutrition improve child growth and development as well as economic growth and development, sustaining the child throughout a productive adulthood and sustaining the economy beyond the minerals boom by investing in human capital. The AfDB Group *et al.* (2013) conclude that Zambia is vulnerable on both these counts: 'Zambia's long-term economic prospects hinge on the prudent capture and deployment of copper revenues as well as harnessing the potential of non-copper minerals and other natural resources. Ultimately, manufacturing activity, driven by the private sector, and directly or indirectly linked to these natural resources, will be critical

to the country's long-term prosperity.⁷ What better way to capture and deploy copper revenues than to invest a significant portion of them in the first 1,000 days after conception, to provide a platform for future growth and development? Investing in nutrition will help transform a temporary natural resource boom into a sustained human resource boom. The resources are there: the World Bank estimates that Zambian tax revenues are 17 per cent of its GDP, or US\$3.5 billion per year. Compare that to the few million dollars per year spent on nutrition-specific interventions. The World Bank is currently engaged with costing the Zambian NFNSP, including a benefit analysis in terms of Disability-Adjusted Life Years and lives saved, which will go some way towards filling this gap.

Second, it is clear that inequality is a major issue in Zambia; the country has one of the highest income inequality measures in the world (World Bank 2014a). Despite this, the wealthiest groups in Zambia are unable to escape stunting; UNICEF (2013) reports that the 2007 Zambian DHS shows that the population with the top 20 per cent of income still experiences stunting rates of 33 per cent. Higher income provides little refuge from malnutrition in Zambia. This likely reflects the fact that improvements in health services, water, sanitation and other nutrition-relevant factors are not easily purchased as infrastructure does not exist. Greater quality of services and greater equity of access are vital if stunting is to be reduced. Therefore research that delves into the extent of inequity in access to good nutrition services, the drivers of access, and what to do to improve it would be of high value.

Third, where are the nutrition capacity gaps the most constraining? Is it the lack of front-line workers delivering nutrition-specific interventions? Or is it that these workers are not trained and equipped to do the right things? Or is it a lack of incentives of front-line workers delivering nutrition-sensitive interventions to embed nutrition within their domains? Or is it the inability of different sectors and ministries to plan and act in concert – a lack of strategic and managerial capacity? Or is it all of the above? Some more research on these issues is sorely needed.

Fourth, much evidence is needed to improve the effectiveness of nutrition-specific interventions. A consultative workshop led by the SUN Fund and NFNC in October 2013 identified a number of gaps around (a) strengthening growth monitoring and promotion at health facilities and community level facility points; (b) identifying key inhibitors and facilitators for the adoption of appropriate nutrition behaviours and practices; and (c) ways of promoting diet diversity either through household practices around food processing, preservation and storage, strategies to influence the consumption of diverse diets by pregnant and lactating women and the promotion of scale-up and uptake of pro-vitamin A biofortified foods. Understanding how to expand the management of acute malnutrition is another area Zambia needs to put much more effort into as current coverage of acute malnourished children is inadequate, at an estimated 17 per cent (WFP 2013).

Finally, there is also a set of research issues around how to make nutrition-sensitive interventions have a bigger

impact on nutrition. For example, how to manage the levels of aflatoxin in the production, processing and storage of cereal and grain (as a prerequisite for developing Zambian ready-to-use therapeutic foods (RUTF), as well as for general consumption); the influence of school-based nutrition education on nutrition behaviour and practices at household level; measures for integrating nutrition in agricultural policy and implementation; how to strengthen the power of women to influence decision-making around nutrition-relevant action; and how to maximise the nutrition impact of social protection programmes (for example, when cash and when food? Age-based targeting or not? Focused on prevention or treatment?). These evidence gaps are crying out for more – and more rigorous – impact evaluations.

6 Conclusions

Zambian malnutrition rates have been high for a very long time, remaining stubbornly high despite high GDP growth for long periods in Zambia's history. Unfortunately, these figures have not been tested by an upsurge in resource allocations to nutrition-relevant actions; spending on nutrition programmes has remained negligible in relation to tax revenues. It is to the great credit of the Zambian leadership that a great deal of momentum for nutrition has been built since 2011; this must now be acted upon.

The challenge now is to turn that momentum into increased and more equitable programme coverage, improved quality of service delivery, and a wider set of sectoral instruments that support nutrition in a sensitive way. Undernutrition reduction requires action on a number of fronts. While a whole of government effort is necessary, it is not sufficient; undernutrition reduction requires a whole of society effort: civil society, researchers, the private sector, the media and international development partners all need to pull together. Civil society has to keep the pressure on government, the private sector, development partners, the media – and itself – to make more undernutrition-reducing choices and increase demand for better nutrition, even while keeping more than an eye on burgeoning rates of over-nutrition. Researchers need to step up their efforts to guide resources to where they have the greatest and longest lasting effects. The articles in this *IDS Special Collection* have shown how the commitment to nutrition has been built in Zambia, and have provided some pointers and guides to the ways in which that increased commitment could be leveraged to raise resources and how to allocate these. We have identified a number of gaps that can be filled by a committed whole of society approach: gaps in stakeholder coordination; capacity, funding and evidence.

Zambia is potentially on the cusp of a great economic transformation. Can gains in economic growth from temporary mineral resources be translated into gains in child growth which reduce mortality and suffering, but also serve to power economic growth in a sustainable way? Or will we see a situation where current fast economic growth is another redundant flash in the pan? By investing much more of their increasing stream of tax revenues in malnutrition-reducing efforts, Zambian policymakers can make the transformation vision much more likely. In this way, economic growth can be made more sustainable and

more transformative. Investing in the most vulnerable members of its society – children under the age of two and their mothers – is a sure-fire way for Zambia to turn fast

Notes

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- 1 Ministries of agriculture, health, education, local government (water and sanitation), and community development and maternal and child health (social protection).
- 2 Main highlights of the MCDP include: (1) developing guidelines for a set of 14 nutrition priority interventions to be included in the ‘minimum package’ to be scaled up at country level with support of the SUN Fund; (2) development of guidelines for the preparation of

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- multisectoral district plans to be supported under the SUN Fund; (3) identification of priority operational research themes; (4) development of the national level sector plans for the relevant line ministries (agriculture, health, local government and the NFNC), including two multisectoral district plans; and (4) support for ten scholarships to Ministry of Health students enrolled at the national university to pursue the BSc in human nutrition and dietetics.
- 3 The programme is tentatively bringing together different actors – donor community, government departments at national, provincial and district administrations, traditional rulers and civil society organisations (CSOs); development of multisectoral plans at the district level has given impetus for the establishment of district-level nutrition coordination committees to create demand for and coordinate nutrition services.
 - 4 The SUN Fund was established outside the national coordinating authority due to capacity issues at the NFNC, through international competitive tender.

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