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**Toward an Integrated Approach for Addressing  
Malnutrition in Zambia**

A Literature Review and Institutional Analysis

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## **INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE**

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## ABSTRACT

Due to the predominance of direct, specific interventions in nutrition for development, the health sector tends to own nutrition, with interventions customarily implemented through health programs. The premise that the agriculture sector should also be a vehicle for improved nutrition is intuitive, but this sector often delivers neither good nutrition nor food security to the most vulnerable in the population. The complex and multisectoral nature of malnutrition may explain why it has not been effectively addressed. Though we know many of the solutions, such as intersectoral action which is critical to addressing this complexity, to date there is no consensus on how intersectoral solutions are best implemented or institutionalized. This review brings together experiences from across Sub-Saharan Africa in order to draw out recommendations for improved intersectoral implementation going forward, and assesses how these findings apply specifically to the Zambian context.

The experiences reviewed suggest three broad barriers to intersectoral collaboration for nutrition: low political commitment and mobilization; sector-bound organizational structures and weak coordinating bodies; and lack of human resources and capacity. Key lessons for improved intersectoral implementation include the role of advocacy in framing the problem in context and highlighting mutual gains for different sectors, to create the political will and working space for nutrition action; the importance of organizational arrangements, including convening or coordinating bodies with multisectoral credibility to facilitate mobilizing and resourcing power; and the importance of building not only technical but also strategic capacity to manage multisectoral relationships for improved nutrition outcomes. Ultimately, these solutions will have to be tailored to country contexts.

Zambia is an ideal candidate for a country that could make a significant impact on its malnutrition problem. With the emergence of the Scaling Up Nutrition (SUN) movement in the country, nutrition has received some high-level political attention, and the multi-sectoral nature of nutrition is recognized in overarching development policies and strategies. However, political attention has not moved into concrete action, and nutrition strategies, policies, and plans are 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; implementation of these grand ideas is severely lacking. Several vital but attainable processes would improve intersectoral coordination for nutrition in Zambia and enable its potentially strong policy to be implemented across sectors. These include strategic lobbying for real political and social commitment to nutrition in sectors outside of health; strengthening the National Food and Nutrition Commission both in terms of its power to convene the different actors and the strategic capacity of its leadership; and improved technical training outside of core nutrition competencies in nutrition workers in general. These recommendations are interlinked; one cannot happen without the other, and all are necessary but not sufficient to improve the nutrition situation in Zambia. Movement should start in all areas at once, and the high-level momentum created by the SUN movement is an opportunity, providing the potential for cross-sectoral dialogue and increased resources, that should not be missed.

**Keywords: nutrition, intersectoral collaboration, Zambia**

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## ABBREVIATIONS AND ACRONYMS

ACF	Agriculture Consultative Forum
CAADP	Comprehensive African Agriculture Development Programme
FAO	Food and Agriculture Organization of the United Nations
FISP	Farmer Input Support Programme
FNS	Food and Nutrition Section (MAL, Zambia)
FRA	Food Reserve Agency
FSP	Food Security Pack
GDP	gross domestic product
HIV	human immunodeficiency virus
IFSS	Integrated Food Security Strategy (South Africa)
INP	Integrated Nutrition Programme
IU	international units
IYCF	Infant and Young Child Feeding
M&E	monitoring and evaluation
MAL	Ministry of Agriculture and Livestock (Zambia)
MDG	Millennium Development Goal
MNI	Mainstreaming Nutrition Initiative
MoH	Ministry of Health
NAP	National Agriculture Policy (Zambia)
NEP	Nutrition Enhancement Program (Senegal)
NFNC	National Food and Nutrition Commission
NFNP	National Food and Nutrition Policy (Malawi/Zambia)
NFNSP	National Food and Nutrition Strategic Plan (Zambia)
NGO	nongovernmental organization
PAM	Program Against Malnutrition
PHC	Primary Health Care
PRSP	Poverty Reduction Strategy Paper
RAIN	Realigning Agriculture to Improve Nutrition
SADC	Southern African Development Community
SNDP	Sixth National Development Plan (Zambia)
SSA	Sub-Saharan Africa
SUN	Scaling Up Nutrition
TANA	The Agriculture-Nutrition Advantage Project
UNICEF	United Nations Children’s Fund



# 1. WHY AN INTEGRATED APPROACH FOR ADDRESSING MALNUTRITION?

Zambia has made great strides in economic development in recent years, to the point that the World Bank has reclassified the country as “middle-income” (World Bank 2012), but Zambia still shows a level of chronic malnutrition, manifesting as stunted growth, far beyond the limits defined as acceptable, at almost one in two of its children (Central Statistical Office et al. 2009). As explored below, elaborating and implementing the solutions to such a complex and multifactorial problem as malnutrition requires input from more than a single sector, and business-as-usual, health-oriented interventions and policies will not be sufficient.

The paper addresses the following questions:

- Why is an integrated approach important for addressing malnutrition?
- What are examples of such an approach in Sub-Saharan Africa and beyond? What are key lessons from these recorded experiences?
- What are the institutional frameworks in Zambia that might offer such an opportunity?

## Rationale for an Integrated Approach

The United Nations Children’s Fund (UNICEF) nutrition framework (UNICEF 1990) identifies key underlying determinants of nutritional status as sufficient quantity and quality of food, adequate health services and hygiene, and appropriate childcare and feeding practices; satisfactory access to these three broad elements is vital for proper nutritional status and a resultant healthy and productive life (Bhutta et al. 2008). The public goods and services relating to these will necessarily be available from a range of sectors, and these need to be provided in a coordinated fashion for maximum effect (Garrett 2008); recent international strategies for tackling malnutrition promote direct, nutrition-specific interventions alongside broader, nutrition-sensitive programming and policies (Standing Committee on Nutrition 2011b).

However, with some notable exceptions, the underlying determinants of malnutrition are normally tackled separately by different sectors, with programs derived from separate institutions by government ministries or nongovernmental organizations (NGOs) with separate resources, frameworks, and approaches at the basic level. Due to the predominance of direct, nutrition-specific interventions in nutrition for development, the health sector tends to own nutrition, with interventions typically implemented through health programs. This extends to addressing some of the underlying determinants of child nutrition, toward improvements in health services and the delivery of hygiene, childcare, and nutrition behavior change messages. Nutrition, however, cannot remain solely in the domain of health services. That the agriculture sector in particular should also be a vehicle for improved nutrition is intuitive: Agriculture has the potential to improve nutrition through the production of food for consumption or income, through improved sensitivity to the role of women in the sector, through modulation of food prices and of the quality of foods available, and through general agricultural and economic growth. However, this sector often delivers neither good nutrition nor food security to the most vulnerable in the population, partly due to a focus on production of quantity rather than nutrition outcomes, and reliance on national-level indicators of food sufficiency rather than issues of access and diet quality (World Bank 2007).

The agriculture and health sectors in particular can make significant contributions to improved child nutrition through grappling with the determinants of malnutrition. Integration between the agriculture and health sectors, aligning objectives and resources for maximum impact, is a potentially potent mechanism for addressing the multidimensional causes of malnutrition, but while several countries, including Zambia, are successfully writing nutrition into policies for different sectors, there is as yet no consensus on how intersectoral solutions are best implemented or institutionalized. Intersectoral decisionmaking demands better data, information, and understanding than is currently available, and more

evidence is needed on how to design, implement, evaluate, and scale up successful, integrated agriculture-nutrition-health program models for improved nutrition outcomes (von Braun, Ruel, and Gillespie 2011).

This paper sets out to investigate what evidence exists from initiatives in other Sub-Saharan African countries for integrated action across sectors to reduce malnutrition, through a comprehensive review of the literature. It concludes with an analysis of nutrition-related policies and institutions in Zambia, an assessment of Zambia's current standing on intersectoral coordination for nutrition, and key lessons for Zambia in light of the findings.

## Definitions of Terms

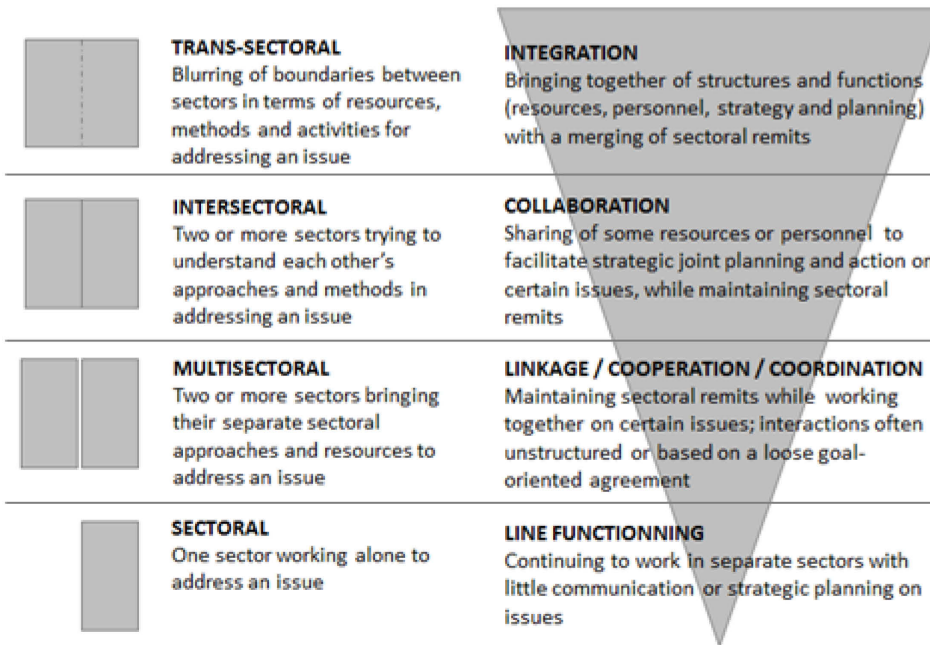
While integration is intuitively appealing, evaluation is beset by lack of a common understanding of what it involves. Indeed, this lack of a commonly adopted definition and the variety of approaches taken to analyze integration has been referred to as an “academic quagmire of definitions and concepts analysis” (Howarth and Haigh 2007). This concept has, however, been explored at some length within the health sector, where integration of services is a common theme, and in other parts of the social sector. An overview of hierarchies of definitions from different studies is given in Table A.1, and key themes are explored briefly below.

A recent critical review of the published literature on concepts, definitions, and analytical and methodological approaches to integration—as applied to health system responses to communicable disease—found that integration is understood and pursued in many ways in different health systems (Shigayeva et al. 2011). Shigayeva et al. developed an analytical framework to distinguish forms of “integration” along a continuum, ranging from no integration, to partial integration, to full integration, defining a range of interactions between programs (or indeed a program and other components of a health system): no formal interactions, when no integration exists; linkage or coordination when partial integration exists; and full integration. Across this continuum of interactions there is increased formality in governance, sharing of responsibilities for joint activities, and pooling of resources.

Others have constructed similar hierarchies: Flynn (2002), in assessing collaboration in public management, notes that partnerships at their least effective consist of meetings for the sake of meetings, with his continuum progressing through increasingly shared management and resources to mergers and acquisitions. Himmelman (2002) notes a similar progression, whereby each level from networking to collaboration builds upon the last, but he stops short of including full integration/merger. This resonates with a definition of intersectoral cooperation (Kalegaonkar and Brown 2000) that consists of bringing actors from the state, market, and civil society sectors together to achieve mutual understanding on an issue and negotiate and implement mutually agreeable plans for tackling an issue once it is identified. And Boon et al. (2004) bring in concepts of different disciplines (or indeed sectors) working together, in their assessment of integration in a clinical setting. These various definitions are approaching a consensus on hierarchies of integration, based on the premise that different individuals or sectors each possess distinctive assets that can be combined in various productive manners to solve complex problems.

Taking this further, a representation has been developed in Figure 1.1 to provide clarity in terms of levels of sectoral involvement alongside the continuum of integration used in this paper. These terms provide guidance for the discussion that follows, bearing in mind that these definitions are not definitive (not everyone uses this language in the same way), but rather they are a useful starting place for clarifying the language used for talking about sectoral integration at different levels. We move from using integration to using coordination or collaboration in the review below, where authors have not suggested another term in their work, to reflect the most common (and perhaps desirable) levels of intersectoral work for nutrition.

**Figure 1.1—Sectoral involvement and definition of terms**



Source: Authors' creation based on reviewed literature.

## 2. RECORDED EXPERIENCES OF INTERSECTORAL COLLABORATION TO ADDRESS MALNUTRITION

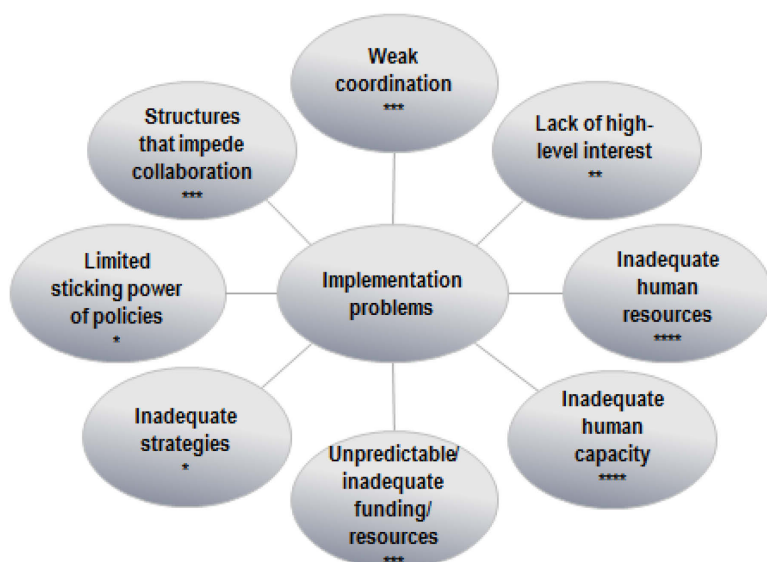
The following section provides a review of recorded experiences of intersectoral collaboration for nutrition in various contexts, focusing on Sub-Saharan Africa (SSA). In particular, these case studies are used to draw out key lessons with a focus on how collaboration can work in practice.

### Nutrition Policy in South Africa

Nutrition policy as it relates to multisectoral cooperation in South Africa has been reviewed by Swart and colleagues (2008). The major response to malnutrition in South Africa is the Integrated Nutrition Programme (INP), which is located within a primary healthcare (PHC) framework. The program is based on internationally accepted best practice; has a comprehensive set of interventions<sup>1</sup>; and defines actions that span therapeutic intervention, such as treatment, rehabilitation, disease prevention, and health promotion, with an emphasis on the social determinants of nutritional health. Essential aspects of comprehensive PHC include documenting the impact of broader political and economic forces on the health and nutritional status of the population; working cooperatively with other sectors and the communities involved; raising awareness of local and global issues affecting food production and supply; and advocating for policy change in relation to these issues. Cooperation in this context is understood to be between different departments, including agriculture, which implies a review and alignment of action to combat the problem of malnutrition.

However, analyses of selected interventions suggest that implementation of the integrated program is suboptimal; a summary of the key factors limiting optimal implementation is provided in Figure 2.1. Poor implementation was not due to inappropriate policies and strategies nor lack of knowledge about relevant solutions. Rather, weak coordination, structures that impede cooperation, and inadequate funding allocation were identified as being moderate contributors; inadequate human resources and capacity were identified as the most significant contributors to the lack of progress.

**Figure 2.1—Key factors affecting implementation of South Africa’s Integrated Nutrition Program**



\*\*\*\* Significant contributor, \*\*\* Moderate contributor, \*\* Contributor, \* Possible contributor

Source: Swart, Sanders, and McLachlan 2008.

<sup>1</sup> For details of such best practice, see Bhutta et al. 2008 and Bryce et al. 2008.

Looking toward what was required for improvement in the nutrition situation in South Africa, the Swart, Sanders, and McLachlan (2008) study identified a concerted and coordinated effort to develop a range of capacities at different levels and within different cadres of health workers as being central. These capacities and skills should not only be technical in nature, but also strategic, furnishing workers with the skills to work across a range of actors and audiences. In addition, further research into implementation, including into effective coordination and collaborative structures, was encouraged to assist in finding sustainable solutions. Key recommendations pertaining to multisectoral cooperation are laid out in Box 2.1.

**Box 2.1—Recommendation for implementation of nutrition strategies and programs through intersectoral action in South Africa**

Key message	Detail
Develop strategic capacity at the national and provincial levels of the Nutrition Directorate.	This strategic capacity refers to the human and institutional capacity required to broker agreements, respond to challenges and opportunities, build relationships between nutrition actors, and undertake strategic communication with varied audiences, to name a few. The purpose of such actions will be to establish political will, ensure institutional arrangements and cooperative agreements among all stakeholders, and secure operational capacity for acting at scale. It is clear that the development of strategic capacity at the national, as well as the provincial, level is required to positively affect the implementation of all nutrition-relevant strategies in South Africa.
Develop capacity at all levels to manage change. Do active nutrition advocacy. Strengthen intersectoral and inter-professional collaboration.	Although the aforementioned strategies are important, Swart and colleagues (2008) say that “more of the same is not enough” and suggest that capacity development must go beyond improved technical capacity. Within the South African scenario this will require capacity development at all levels and in all sectors, including the strengthening of intersectoral and multi-professional collaboration, because much of the critical nutrition-relevant work is performed by health workers (including community health workers) who have no or limited nutrition-specific training.

Source: Adapted from Swart, Sanders, and McLachlan 2008.

**Food Security Strategy in South Africa**

The challenges inherent in fostering intersectoral alignment and coordination were reiterated in a more recent paper evaluating the Integrated Food Security Strategy (IFSS) in South Africa (Drimie and Ruysenaar 2010). The strategy was intended to integrate the many previously isolated policies, including the INP, to tackle the challenge of food insecurity. The paper argued that there is a disjuncture between the institutional response mechanism defined in South Africa’s strategy and the complexity of food insecurity nationally. It outlines why, as a response seated uncomfortably under the leadership of the National Department of Agriculture, the IFSS remains frustrated by a range of structural and organizational challenges. The IFSS provides a useful case study to demonstrate the importance of institutional arrangements to achieve food security that, by its nature, requires integrated responses from diverse stakeholders.

The IFSS proposed institutional reform for food security that was based on enhanced coordination to meet a number of priority areas and strategic objectives. These would include enhancing intergovernmental relations and improving coordination among regional, national, provincial, and local governments in support of food security goals; strengthening existing decentralized planning systems by backing them up with resources and technical support, enabling coordination among political and administrative structures; fostering cooperation among government, parastatals, the private sector, and NGOs; and enabling coordination among government departments at national and provincial levels. The paper identified a number of institutional constraints that have limited the success of the IFSS, which are summarized in Box 2.2.

## Box 2.2—Institutional constraints in South Africa’s Integrated Food Security Strategy

Constraint #1	The governmental department appointed to coordinate and facilitate the integrated strategy has failed to do so in a comprehensive fashion, because its focus has been on a prosperous agricultural sector rather than ensuring “food security for all.” This has led to a “bias” in the food security response to focus on agricultural production, which has inadequately engaged with the challenge.
Constraint #2	The coordination of food security has, moreover, been tasked to a directorate within a governmental department that does not have much administrative capacity. As such, the directorate has no mechanisms to drive the process or recourse to ensure that other departments, let alone directorates in its own organization, work within the strategy.
Constraint #3	There are no dedicated funds for government to spend on food security, at all administrative levels. All budgets have been allocated by sector, preventing the emergence of joint projects and programs funded by one entity.
Constraint #4	The absence of a food security policy or legislative framework prohibits government from providing a clear line of authority as well as the means of enforcing noncollaboration; as a result, the implementation of relevant programs has been in a disjointed manner.
Constraint #5	Stakeholder dialogue with civil society and within government has been minimal.

Source: Drimie and Ruysenaar 2010.

## Cross-Sectoral Coordination in Mozambique, Nigeria, Uganda, and Ghana

In a selection of papers reviewing cross-sectoral national nutrition coordination agencies, focusing on the Agriculture-Nutrition-Advantage (TANA) project in Mozambique, Nigeria, Uganda, and Ghana, Benson and colleagues undertook an evaluation of three functions of existing institutional frameworks: cross-sectoral coordination, advocacy to sustain political commitment to address malnutrition, and resource mobilization (Benson and Satcher 2004; Benson, Palmer, and Johnson-Welch 2004; Benson 2007). The evaluation indicated that the cross-sectoral nutrition coordination units in these countries have been of limited value; Mozambique, Nigeria, and Uganda, with nutrition coordination bodies, are doing just as badly on coordination for nutrition as Ghana, without one. Benson notes that this is not primarily due to cross-sectoral barriers but rather due to the function of maintaining continued political commitment for efforts to address malnutrition. In other words, cross-sectoral coordination only becomes important if the problem of malnutrition itself is treated as politically important, thereby stimulating action in various sectors. This resonates with the South African evaluations whereby both the INP and the IFSS were deemed ineffective partly as a result of a lack of *political will* necessary to ensure that coordination occurs at implementation level, and also with studies in other countries such as Peru, where sustained political commitment to intersectoral work for nutrition was deemed vital to the ultimate success of the nutrition strategy (Mejía Acosta 2011).

Mechanisms to ensure continued political support for efforts to address malnutrition are as critical to the effective operation of such agencies as are any cross-sectoral coordination or resource allocation and oversight mechanisms. In all the countries examined in the TANA study, what political commitment existed to address malnutrition was insufficient to mobilize resources and to build coordinated efforts across all sectors concerned. It was concluded that only if sustained advocacy is undertaken could the potential value of cross-sectoral nutrition coordination agencies be realized.

Benson (2008) argues that it is vital to have a policy narrative about the importance of nutrition that is relevant to country conditions and can be presented to policymakers. A policy narrative is a tool, but it is argued that advocates must carry it beyond the usual audiences of those directly involved with nutrition activities (Garrett and Natalicchio 2011). The creation of a broad social consensus in support of action on nutrition—one that will continue in spite of political change—requires that advocacy go beyond one narrow constituency, such as the technical nutritionists who are already convinced and who are just one of many threads in that fabric. The goal is to inculcate the notion that nutrition is central to

development to all who may influence action on nutrition, including those in and out of government and those in and out of nutrition.

### **Reflections from Malawi**

Malawi has a Department of Nutrition, HIV and AIDS, located within the Office of the President and Cabinet, tasked with finding funding for and coordinating national nutrition activities through the National Food and Nutrition Policy (NFNP). The department has had successes in improving funding allocation to nutrition and in making encouraging revisions to the Agricultural Development Plan to include nutrition objectives. However, the NFNP is still split into two separate policies to tackle food security and nutrition, with the agriculture and health ministries tackling their respective parts. A challenge for Malawi is to improve understanding of the relationship between food security and nutrition so that the two sectors can cooperate more effectively (Meerman 2008).

Benson (2011) developed his argument further in reference to Malawi. He reiterates the point that achieving sustainable nutrition security requires cross-sectoral action, but that actually achieving effective cross-sectoral action is more the exception than the rule. In the case of Malawi, this is as a result of the institutions and government, like most national governments globally, not being set up to address cross-sectoral issues, despite the presence of a coordination unit. Budgets follow sectoral lines, and sectoral objectives motivate staff in sectoral institutions. Sectors are more often found to be in competition for limited financial and human resources than to be working in a collaborative manner to attain an important societal goal, such as the complexity of nutrition security. Similarly, sector-specific criteria form the basis for evaluating sector effectiveness and hence for the allocation of resources. No matter how important, objectives requiring cross-sectoral, coordinated action will rarely be attained by routine sector-planning mechanisms.

### **Intersectoral Cooperation in Madagascar and South Africa**

Drawing on several examples of where intersectoral cooperation has worked in various non-nutrition development projects, including from Madagascar and South Africa, Kalegaonkar and Brown (2000) identify factors involved in such initiatives. This often involves *conveners* who are credible to all involved, and can help relevant parties frame the issue so that mutual interests are reflected in the initiative, balance power differences that are likely to exist, and invest in building relationships. Addressing these elements in the initial stage of any cooperation can minimize the likelihood of problems and build commitment and interest in the initiative from the outset.

Following this, the analysis turns to what is required to carry out initiatives in intersectoral cooperation once there is agreement to move forward. The types of organizational arrangements that facilitate cooperation among actors from the same sector may not necessarily be adequate when it comes to actors from different sectors. These new arrangements—operational committees or coordinating units, for example—need to enable involved parties to develop shared plans, participate effectively in decisionmaking processes, manage crises, and identify mutual gains. Without these arrangements in place, cooperation that is agreed to in principle can easily fail in practice.

The lessons discussed above are summarized in Box 2.3. Although the first three lessons discuss different stages of an intersectoral initiative, it is nevertheless useful to also think about challenges and outcomes at the outset. By recognizing early on what is involved in intersectoral cooperation, participating actors can also tailor their role and activities to reap optimal benefits from the partnership.

### Box 2.3—Summary of lessons for intersectoral collaboration in Madagascar and South Africa

Lesson #1: Intersectoral cooperation is most appropriate when:	<ul style="list-style-type: none"><li>○ Previous single-sector problem solving has been unsatisfactory, particularly to high-power actors;</li><li>○ Problem solving requires information and resources held in more than one sector;</li><li>○ Past relations among key actors do not foreclose cooperation.</li></ul>
Lesson #2: Starting intersectoral cooperation requires:	<ul style="list-style-type: none"><li>○ Conveners with the credibility to bring all relevant parties together;</li><li>○ Framing problems to emphasize the need for and mutual gains from intersectoral participation;</li><li>○ Balancing power differences among the parties from the outset;</li><li>○ Investing in relationship building as well as problem solving.</li></ul>
Lesson #3: Managing intersectoral cooperation requires organizational arrangements that enable parties to:	<ul style="list-style-type: none"><li>○ Develop shared plans that identify roles, responsibilities, and resources;</li><li>○ Foster mutual influence in decisionmaking;</li><li>○ Manage conflicts in implementation;</li><li>○ Seek and identify mutual gains.</li></ul>
Lesson #4: Challenges to intersectoral cooperation include:	<ul style="list-style-type: none"><li>○ Co-optation that reduces contributions of party differences;</li><li>○ Inequitable distributions of costs and benefits;</li><li>○ Initial experiences that shape future cooperation.</li></ul>
Lesson #5: Positive outcomes of intersectoral cooperation include:	<ul style="list-style-type: none"><li>○ Innovative solutions to intractable problems;</li><li>○ Catalytic or multiplier effects for broader social change;</li><li>○ Sustainable social change;</li><li>○ Creation of multisectoral social capital and new capacity for joint local action.</li></ul>

Source: Kalegaonkar and Brown 2000.

### Successful Collaboration in Senegal

According to Garrett and Natalicchio (2011), available country studies and project documents relating to multisectoral approaches for addressing malnutrition are largely descriptive rather than analytical. None explicitly examines the design or mechanics of operation of multisectoral approaches in depth. The authors propose a conceptual framework that classifies the various factors thought to be associated with successful intersectoral working into the internal context, the external environment, and institutional links. Two case studies from Senegal and Colombia provide evidence that challenges the stated presumptions and suggests how and when to work multisectorally; the Senegal experience is reviewed here.

Senegal is on track to becoming one of the few countries in SSA to reach the Millennium Development Goals for nutrition. This is largely due to the Nutrition Enhancement Program (NEP), which uses a multisectoral and multi-actor approach, coordinating actions across ministries, donors, and NGOs. NEP operates under the supervision of the Coordination Unit for the Reduction of Malnutrition, which is attached to the Office of the Prime Minister and coordinates programs and actions undertaken by both public and private sectors to reduce malnutrition.

Garrett and Natalicchio (2011) detail a number of key findings through a comparison of Senegal and Colombia, which are summarized in Box 2.4. The case studies confirm that working multisectorally in nutrition is possible, although it means changes to the usual ways of working and thinking. Echoing the work of Benson and others, an external actor who pushes for the malnutrition agenda will create the space necessary for action, and information on the problem in context will aid this advocacy by tracking successes over time and keeping malnutrition on the agenda. Because of the need to coordinate action

among multiple agencies, arriving at a solution will require an inclusive process (of institutions and actors); lateral, rather than top-down, leadership; and flexible institutions. Further, incentives (financial but also crucially personal) will drive the process once this working space has been created, although success is likely to take time. Understanding how to devise and manage dynamic, multi-agent, multi-institutional processes is an emerging facet of modern management, and the nutrition sector would do well to learn from this literature.

**Box 2.4—Key lessons from Senegal for working multisectorally in nutrition**

Finding #1	Leadership of a particular type is essential for success: the leadership exhibited in Senegal and Colombia shared specific characteristics. Succeeding in working in a complex system may owe much to personal—not just institutional—factors.
Finding #2	An external catalyst chose to put nutrition on the policy agenda. In Senegal, it was interest by political authorities plus the World Bank. These authorities created the policy space, and senior staff and others (including the donor) were responsible for filling and developing a multisectoral program.
Finding #3	Although the case studies support the general thrust that coordination and implementation are more difficult when agencies are institutionally weak, institutional strength did not, however, guarantee success. In fact, the possession of such strengths can mean that ministries have less incentive to collaborate, because they can implement programs and policies on their own. Collaboration may prove easier at the local level because of a lack of a multi-institutional structure and less capacity. The case studies showed that collaboration could work even when partners are weak. Implementation depended to a large extent on NGOs, which had the necessary implementation capacity and could assist weaker partners.
Finding #4	The organizations in both countries exhibited values that promoted collaboration, including institutional flexibility and an ability to value the contributions of others. Program management worked hard to be inclusive, involving a wide range of stakeholders and potential partners in creating vision and strategy for the program. NEP was stronger at working vertically than at working horizontally. The lead council largely implemented the program through NGOs in collaboration with local governments, which meant that operational collaboration among ministries at the national level remained weak.
Finding #5	Both programs exhibited substantial operational flexibility internally and in contracting implementing partners. Both programs conveyed clear principles of operations to partners, especially implementing organizations, and agreed on expected results.
Finding #6	Incentives were provided for cooperation, which helped partners recognize that the benefits of their participation exceeded the costs. Incentives were not only financial; managers also pursued organizational incentives by offering assistance or arrangements that would help partner organizations achieve their own goals. Personal interests tended to be the initial forces that brought people together (once a higher authority had established a space for the initiative to develop).
Finding #7	The role of information was influential. Survey data helped establish the severity of the problem of hunger and malnutrition. Staff used the conceptual model of nutrition from UNICEF and a particular technique to develop strategy among multiple stakeholders. Information was used not only for tracking operational performance but also for making the issue of nutrition politically viable, promoting widespread understanding and ownership, creating calls for action, and keeping nutrition on the development agenda.
Finding #8	Achieving multisectorality can take years. To succeed, a long, multi-activity process is required, not a one-off workshop. It demands extensive consultation, particularly with other mid- and upper-level civil servants and the entire range of operating partners, to develop understanding, vision, and strategy, not simply agreement at the ministerial level. The process was often difficult and littered with contention but did achieve positive results.

Source: Garrett and Natalicchio 2011.

### 3. KEY THEMES FROM THE LITERATURE

Intersectoral cooperation involves high stakes. Such partnerships can build organizational and institutional capacity for innovative and large-scale sustainable change, but they can also seriously damage the possibilities for future intersectoral working when they go wrong. Initiating intersectoral cooperation requires significant resources—time, energy, funds, and skills—and managing these relationships also requires considerable resources. Because of differences in underlying sectoral rationales, purposes, and organizational processes, intersectoral cooperation is a challenging strategy in terms of design and implementation. If carried out carefully, however, the payoffs are significant, including finding solutions to difficult yet important development problems such as malnutrition, triggering catalytic or multiplier effects, fostering sustainable change, and creating intersectoral social capital that promotes new local capacity for joint action (Kalegaonkar and Brown 2000).

However, there are significant barriers to effective intersectoral coordination for nutrition in practice. In many contexts, nutrition is not prioritized because policymakers see it as an outcome from, not an input into, human development (Garrett and Natalicchio 2011). In evaluating the Mainstreaming Nutrition Initiative (MNI), undertaken in several countries including some in Sub-Saharan Africa (SSA),<sup>2</sup> Pelletier and colleagues (2011) claim that undernutrition generally has not received the necessary attention required to effectively deal with it in policy agendas at global and national levels, and implementing efficacious interventions at a national scale has proven difficult. A review of Poverty Reduction Strategy Papers for countries with a high burden of malnutrition found that although more than 70 percent of these papers included nutrition for development, only 35 percent allocated funding to nutrition (Shekar and Lee 2006), signaling limited political commitment to the issue.

Even where the policy environment is supportive of nutrition, intersectoral implementation is very often limited. A key issue is the way government tends to be structured, subsequent sector-specific resource flows, and evaluation and incentive arrangements. Benson (2011) argues that there are good reasons for the sectoral structure of government, but this does have the unfortunate effect of not being sufficiently flexible to effectively address issues that do not fit neatly into the structure, with nutrition being one such complex issue. Relationships among ministries and agencies are often therefore characterized as competitive rather than coordinated (Benson 2007). The location of committees tasked with the coordination of nutrition policies and programs within line ministries is seen to severely limit the power of these bodies to convene actors outside of that ministry, or resource activities (Drimie and Ruysenaar 2010; Swart, Sanders, and McLachlan 2008).

The lack of human resources and capacity for nutrition is another key issue in many SSA countries, constraining the implementation of even the most strategic and well-resourced programs (Swart, Sanders, and McLachlan 2008; Benson 2011). The *Lancet* series on undernutrition (Bryce et al. 2008) suggested that despite a large reservoir of experience and expertise existing at country level for addressing these sociopolitical and operational challenges, staff at decentralized levels often do not possess the knowledge and skills needed to design and implement nutrition interventions in various sectors, and often do not receive adequate guidance from the national level. It has been noted that more important than how many nutritionists exist in a country is the way in which this expertise is deployed (Benson 2008); implementation of nutrition-related activities in all sectors through NGOs, as is common in resource-constrained countries in SSA, keeps government operational capacity low, and it has been noted that existing nutritionists are often technical and narrowly trained, failing to incorporate insights from other sectors (Garrett and Natalicchio 2011).

These broad barriers to intersectoral collaboration for nutrition—low political commitment and mobilization; sectoral organizational structures and weak coordinating bodies; and lack of human resources and capacity—are echoed in the findings of the MNI, summarized in Box 3.1. A key argument

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<sup>2</sup> The MNI undertook evaluations of its draft framework and approach for integrating health and nutrition actions in Pakistan, Vietnam, Bangladesh, Bolivia, Peru, Uganda, and Ethiopia between 2006 and 2009.

is that the heavy investment to identify efficacious nutrition interventions is unlikely to reduce the burden of malnutrition unless or until these systemic and interlinked constraints are addressed.

### **Box 3.1—Insights to improve nutrition intervention from the Mainstreaming Nutrition Initiative**

- High-level political attention to nutrition can be generated in a number of ways, but the generation of political and system commitment requires sustained efforts from policy entrepreneurs and champions.
- Mid-level actors from ministries and external partners had great difficulty translating political windows of opportunity for nutrition into concrete operational plans, due to capacity constraints; differing professional views of undernutrition; and disagreements over interventions, ownership, roles, and responsibilities.
- The pace and quality of implementation was severely constrained in most cases by weaknesses in human and organizational capacities from national to frontline levels.

Source: Pelletier et al. 2011.

The experiences reviewed above also suggest several recommendations going forward. Given the awkward place of nutrition within the sectors, Benson (2007, 2011) stresses that advocacy is a critical element of any effort to raise the policy profile and social consensus for nutrition and to highlight both the human and the economic development benefits of improved nutrition. Policymakers will not generally increase the resources allocated to activities that enhance nutrition security without external pressure; the motivation must come from elsewhere. Consequently, Benson argues, advocacy is much more central to the role of nutritionists than it is for most other professionals. Advocacy should include accurate and relevant information on the scope and scale of the problem within context, to galvanize and maintain action (Garrett and Natalicchio 2011), and should also frame the problem in such a way that all sides see mutual gains from collaborating (Kalegaonkar and Brown 2000), in terms of not only resources but also organizational and personal development for those involved. Benson's work and evidence from Madagascar and South Africa (Kalegaonkar and Brown 2000; Drimie and Ruysenaar 2010; Swart, Sanders, and McLachlan 2008) show that there is a need for independent nutrition advocates or conveners, who should have multi-sector credibility and be able to balance power among often power-imbalanced institutions. Recent success with this strategy has been seen in Senegal, with strategic advocacy putting nutrition firmly on the political agenda (Standing Committee on Nutrition 2011a).

There are, however, important distinctions to be made between political attention (often at a high level), political commitment, and system-wide commitment. Nutrition can receive impressive political attention when high-level officials address it through speeches, executive directives, setting of targets, and establishment of coordinating structures, but this appears to be insufficient. Evidence of deeper political commitment would include allocation of the necessary authority, accountability, and resources to relevant bodies and the exercise of oversight to ensure progress in developing strategies and operational plans. Organizational arrangements allowing for shared resources, responsibility, and decisionmaking, with a flexible and inclusive outlook, and providing incentives for collaboration have been seen to facilitate intersectoral cooperation (Kalegaonkar and Brown 2000; Garrett and Natalicchio 2011); it's a tall order, but not one without demonstrable successes. Intersectoral cooperation may in fact be easier at the local or decentralized level, where institutions may not be so sectorally bound (Garrett and Natalicchio 2011), although sector-specific resourcing and training will still be an issue.

Placing nutrition coordination units under a body with a more overarching mandate, such as high-level ministers' offices or planning and financing ministries, may allow for more effective coordination among sectors for nutrition outcomes (Meerman 2008; Garrett and Natalicchio 2011). The establishment of multisectoral councils or other formal decision structures is unlikely to be sufficient by itself; as seen in the countries reviewed in the MNI (Pelletier et al. 2011) and earlier experiences (Levinson 1995; Benson 2008), strategic advocacy is still needed to create the political will to confer power on these bodies. One approach for overcoming these difficulties is to strengthen not only the technical but also the strategic and management capacities within the nutrition community, bolstering individual and institutional capacity to broker agreements, resolve conflicts, build relationships, respond to recurring challenges and

opportunities, and undertake strategic communications within and across sectors (Kalegaonkar and Brown 2000; Swart, Sanders, and McLachlan 2008). This takes further the argument made in the *Lancet* undernutrition series, which identifies the need to build strategic and operational capacity, and urges that greater efforts be made to gather experiences at national and subnational levels, formalize the knowledge base, and facilitate the exchange of experience across countries for improved capacity for nutrition (Bryce et al. 2008).

The complex and multisectoral nature of malnutrition may explain why it has not yet been effectively addressed, even though we know many of the solutions. Intersectoral action is critical to addressing this complexity, and this review brings together experiences from across SSA in order to draw out key lessons for improved intersectoral implementation going forward. This will necessarily include the role of advocacy in framing the problem in context and highlighting mutual gains for different sectors to create the political will and working space for nutrition action; the importance of organizational arrangements, including convening or coordinating bodies with multisectoral credibility to facilitate mobilizing and resourcing power; and the importance of building not only technical but also strategic capacity to manage multisectoral relationships for improved nutrition outcomes. These interlinked lessons on more effective intersectoral action on malnutrition are summarized in Figure 3.1. The following sections assess how these findings apply to the Zambian context.

**Figure 3.1—Lessons for intersectoral action on nutrition**



Source: Authors' creation based on review of the literature.

## **4. THE *ENABLING ENVIRONMENT* FOR IMPROVING NUTRITION IN ZAMBIA: AN INSTITUTIONAL ANALYSIS**

### **Introduction**

#### ***Rationale and Objective***

Zambia has made great strides in economic development in recent years, but the country still has a level of chronic malnutrition, manifesting as stunted growth, far beyond the limits defined as acceptable. As seen in the review above, although nutrition has traditionally been seen as a health sector issue, single-sector health-based interventions and policies are not sufficient for addressing such a complex and multifactorial problem as nutrition, and the potential role of the agricultural sector and a broader base of policies and institutions in reducing malnutrition are currently being explored by the international nutrition community. The institutional analysis below aims to summarize nutrition-relevant policies and institutions in the Zambian context in order to provide an overview of the environment within which different stakeholders might come together to tackle the problem of malnutrition in the country. The concluding section brings the literature review and institutional analysis together, to suggest lessons for Zambia going forward.

#### ***Methods***

The analysis is based on documentation of agriculture, nutrition, and health policies, programs, and institutions in Zambia, and aims to summarize these as they relate to intersectoral action for improved nutrition. Documents were categorized according to whether they were overarching policies and strategies; specifically nutrition-related policies or strategies; relating to the broader agriculture or health policy environment; relating to institutions and governance affecting nutrition; or related to program implementation. Each document (policies, strategies, program documents, and external analyses of these) was searched, and nutrition-relevant sections summarized, with a brief overall analysis provided at the end. Documents were obtained from a variety of sources (government websites, web searches, and key informants working in the country), but with no central repository of all documents, it is likely that there were omissions and that newer versions of some documents exist. A second phase of this analysis was therefore to seek a review by key government staff involved in the agriculture and health sectors as they relate to nutrition, to fill any gaps and critique the analysis before it was finalized. The initial draft analysis was sent to representatives of the ministries for review, and a meeting was convened in February 2012 to gather feedback, which has been incorporated into this final version.

### **Background**

#### ***Current Situation***

The 2011 Global Hunger Index of nutrition and child health outcomes scores Zambia at 24 out of 100 (worse than the SSA average of 20.5), taken from an average of the prevalence of undernourishment and undernutrition and the child mortality rate in the country. Zambia's score has remained between 24 and 28 since the 1980s (von Grebmer et al. 2011). According to the most recent Zambia Demographic and Health Survey (ZDHS) conducted between April and October 2007, the national prevalence of stunting among children under five years of age was 45 percent, the prevalence of wasting was 5 percent, and that of underweight was estimated at 15 percent; 8 percent of children were estimated to be overweight (Central Statistical Office et al. 2009). Stunting, a manifestation of chronic malnutrition, is therefore of greatest concern in Zambia.

## ***Institutional Nutrition Context***

Government commitment to reducing malnutrition in Zambia dates back to 1967, when the National Food and Nutrition Commission (NFNC) was established within the Ministry of Health (MoH) through the National Food and Nutrition Act (Zambia 1967). This act recognizes 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 National Food and Nutrition Act was amended in 1975 to include provision for the setup of community nutrition groups and their registration with the NFNC. The Food and Drugs Act (2006) provides a legal framework to tackle food quality, safety, labeling, and marketing.

## **Guiding Policies and Strategies**

### ***Poverty Reduction Strategy Paper***

The 2002 Poverty Reduction Strategy Paper (PRSP) (IMF 2002) for Zambia focuses on measures to achieve economic growth at a rate of 5 to 8 percent per annum, with high priority given to enhanced agricultural productivity; the paper states that vulnerable groups of farmers will be assisted to grow more and diverse foods to meet household food security needs as well as surpluses, with improved access to domestic markets. Encouragingly, nutrition is mentioned as an outcome of poor development, as a target for improved development, and for its potential role in economic development. Several nutrition interventions are proposed, including in the education and health sectors, and an overview of the activities of the NFNC is given. The overall nutrition goal in the PRSP is to “achieve sustainable food and nutrition security among the poor and to eliminate all forms of malnutrition in order to have a well-nourished and healthy population that can contribute to national economic development.” The PRSP notes that, due to its intersectoral nature, effective nutrition planning and implementation should be coordinated by “an independent professional and mandated body”; the key nutrition objective under the plan is to strengthen the institutional capacity of the NFNC so that it may carry out its coordination, advocacy, and technical roles. Other strategies include incorporating nutrition objectives into development policies and programs; strengthening nutrition care practices for the poor, those living with HIV, and other vulnerable groups; and preventing and controlling specific macro- and micronutrient deficiencies.

### ***Vision 2030***

Zambia’s National Long Term Vision 2030 (Zambia 2006b), elaborated during a national consultation in 2006, is to become “A Prosperous Middle Income Nation by 2030,” with economic development combined with socioeconomic justice, diversity, equality, and a variety of rights. The vision presents three scenarios of change in Zambia—baseline, preferred, and optimistic—and is to be operationalized through a series of medium-term National Development Plans. The annex contains visions for each sector, including agriculture (a vision of wealth creation and productivity), health (focusing on access to healthcare), and food and nutrition, where the vision is “a well-nourished and healthy population by 2030.” Several broad and aspirational targets are detailed that recognize Zambia’s dual burden of over- and undernutrition and cover the development and advocacy of policies and programs relating to food security, food quality, nutritional deficiencies, noncommunicable diseases, human resources for nutrition, and nutrition institutions and networks.

### ***Sixth National Development Plan***

The Sixth National Development Plan 2011–15 (SNDP) (Zambia 2011) is themed “sustained economic growth and poverty reduction,” and plans to build on achievements during the Fifth Plan through acceleration of infrastructure development, economic growth and diversification, rural investment and poverty reduction, and enhancement of human development. As with the PRSP, the SNDP explicitly recognizes nutrition as an important element of social and economic development, and states as an objective “to improve the nutritional status of the Zambian population through the provision of quality

nutrition services and increased availability, access and utilization of quality and safe foods.” This is to be achieved through a set of six strategies, including revamping the 1967 nutrition act, revising food safety legislation, expanding proven nutrition and health interventions, and advocating for crop diversification and better postharvest practices. Nutrition is also mentioned under the health section of the SNDP, with a strategy to expand nutrition services within the health sector, provide food and food security interventions to HIV-affected households, and provide food safety services. Food security is also mentioned, with the plan aiming to diversify production and attain national and household food security.

## **Food and Nutrition Policy**

### ***National Food and Nutrition Policy***

Zambia’s 2008 National Food and Nutrition Policy (NFNP) (Zambia 2008) outlines the policy framework for the implementation of the nutrition elements of the PRSP. The vision of the NFNP is to achieve optimum nutritional status for the Zambian population, with the same goal as the PRSP: “to achieve sustainable food and nutrition security and to eliminate all forms of malnutrition in order to have a well-nourished and healthy population that can effectively contribute to national economic development.” Objectives include the development of policies and programs to ensure adequate nutrition, food security, and food quality and safety at all levels, underpinned by the National Food & Nutrition Commission Act of Parliament of 1967 (amended 1975) (Zambia 1975) and the recognition of food and nutrition security as a right of the Zambian people that the government pledges to address. The NFNP thereafter is an exhaustive list of best-practice activities to eliminate malnutrition; ensure food security; care for the nutritionally vulnerable such as those living with HIV; build nutrition capacity; take into consideration gender, emergency, and environmental issues around nutrition; and sketch institutional, legal, and financial frameworks to achieve these. No detail is given on time frames or stakeholders; the NFNP is a broad mandate for the NFNC to take action through the National Food and Nutrition Strategic Plan (below). The NFNP, like the PRSP, calls for a multisectoral response to malnutrition in Zambia.

### ***National Food and Nutrition Strategic Plan***

The National Food and Nutrition Strategic Plan 2011–15 (NFNSP) (Zambia, Ministry of Health 2011) takes child stunting, and particularly action in the critical first 1,000 days, as its new strategic direction (a change from the focus on underweight advocated by the Millennium Development Goals). The NFNSP aims to operationalize the NFNP by linking, supporting, or adapting current nutrition plans and programs; removing bottlenecks; and in some cases assigning leadership among ministries and with a generally decentralized approach. The NFNSP rests on eight strategic directions with three supportive, cross-cutting directions (see Appendix Box A.1); each of these has several key strategies that are operationalized with objectives, key activities, outputs and outcomes, a basic monitoring framework, an initial outline for required strategic advocacy and communication support, and existing and required resources. The NFNSP recognizes advocacy and a joined-up communications strategy as integral to success in reducing malnutrition and performing better monitoring and targeted research. The NFNSP also calls for strengthened commitment, coordination, and, in some cases, technical expertise in the areas of legal and institutional frameworks; funding and resources; multisectoral action and alignment; definition of roles; and engagement of nontraditional nutrition allies. Particular emphasis is placed on intersectoral collaboration and alignment with the strategic plans of the agricultural and health sectors. The NFNSP will be officially launched in 2012 (this summary is based on a 2011 draft).

### ***Infant and Young Child Feeding (IYCF) Policy***

IYCF is enshrined in the NFNP. In addition, Zambia developed an Infant and Young Child Feeding Operational Strategy 2006–10 (Zambia, Ministry of Health 2006) to provide guidance on implementation and monitoring to policymakers and program planners. As well as practical guidelines on IYCF in

Zambia, the IYCF operational strategy details several strategic areas, including Strategic Area 2—collaboration and coordination, which aims to “increase effectiveness and efficiency in the implementation of IYCF programs through improved coordination and collaboration of various stakeholders.” Strategies under this strategic area include promoting the use of national, provincial, and local forums for IYCF implementation; strengthening partnerships and existing coordinating institutions for IYCF; and building capacity for monitoring and evaluation (M&E). The operational strategy details several activities under each objective, with time frames within the five years of the strategy, lead institutions (the NFNC in each case), key partners, and expected outputs. There is a plan to update this expired strategy in the near future.

### ***Micronutrient Policy***

The *Zambian Micronutrient Operational Strategy 2004–09* includes vitamin A, iron, and iodine, and mentions micronutrient supplementation and also the need for fortification of different foodstuffs, including maize (see below). The strategy contains a section on “management approaches across sectors,” which discusses the need for cross-sectoral integration, mentioning a micronutrient task force that is supposed to provide a mechanism for discussion across sectors, so helping with integration and information exchange. The report notes that there is ongoing need to improve coordination across sectors and to strengthen information sharing, and the task force is mandated with a role in both cross-sectoral advocacy and policy development, and provides guidance on how monitoring activities will be integrated.

The Government of Zambia Statutory Instrument No. 90 (2001) provides for the fortification of various foods: sugar must by law be fortified with not less than 10 mg/33,300 IU of vitamin A per kilogram, and both fortified maize meal and enriched flour should be fortified with multiple micronutrients (see Table 3.2), although this is voluntary and will miss many Zambians who produce their own staple crops. The NFNC acts as the secretariat of the National Fortification Alliance; maize fortification will likely remain a major political issue but other fortification is being explored.

### ***Other Food and Nutrition Policy***

National Code of Marketing of Breast Milk Substitutes 2006 Regulations (Zambia 2006a) are in place, enshrining many articles of the International Code as law. The National Education Policy is the foundation for the 2006 National School Health and Nutrition Policy, with implementation guidelines provided in the 2008 Guidelines for the Implementation of School Health and Nutrition Program Activities (Zambia, Ministry of Education 2008). The vision is to “promote and provide quality and cost-effective health and nutrition services to all learners in order to improve learning” through several key government-led activities. Zambia’s 2007 Recommendations for IYCF in the Context of HIV (Zambia 2007) aimed to harmonize and clarify the national guidance for IYCF in the context of HIV for all stakeholders in Zambia.

## **Broader Policy Environment**

### ***National Health Policies***

An important component of health policy reform from 1991 was the restructured Primary Health Care (PHC) Program, with successive governments introducing and taking away user fees at the point of use ever since. The Zambian government’s Basic Health Care Package (BHCP) was to be rolled out at all levels of the health sector; one of several priority areas, nutrition had its own target, to be achieved by 2000, to reduce the percentage of underweight children (zero to five years) from 23 to 18 percent. The subsequent National Health Strategic Plan (NHSP) 2006–10 (Zambia, Ministry of Health 2005) was linked partly to Millennium Development Goals, and under nutrition aimed to “reduce Under-5 mortality rate by 20 percent, from the current level of 168 per 1,000 live births to 134 by 2010, and significantly improve nutrition” (page 4, table 1), with a substantial section on nutrition strategies and outcomes and

some ambitious expected output indicators. The plan noted nutrition as an important cross-cutting theme in health, and placed emphasis on partnerships among key stakeholders in health service delivery (Central Statistical Office et al. 2009), with a stated emphasis, among others, of fostering multisectoral responses in key areas such as nutrition.

### ***National Agriculture Policy***

The National Agriculture Policy (NAP) (2004–15) (Zambia 2004) was launched in 2004 as an extension of the PRSP with the objective of positioning agriculture as the key driver of economic growth, facilitating and supporting the development of a sustainable and competitive agricultural sector that ensures food security at national and household levels and maximizes the sector's contribution to the gross domestic product (GDP). The Ministry of Agriculture and Livestock (MAL) is currently in the process of updating this policy, particularly with regard to the inclusion of livestock in the approach, and a draft policy is under review. The NAP emphasizes increased production, sector liberalization and commercialization, promotion of public- and private-sector partnerships, and provision of effective services to support agricultural growth. Although the NAP notes an intention for crop diversification and processing for added monetary and nutritional value, and the breeding of high-nutrient varieties, including indigenous fruits and vegetables, the focus is on GDP and national food security rather than nutrition and household food security as key outcomes. Nutrition is mentioned in the policy as it relates to the processing of foods by farmers for enhanced nutrition, in the provision of extension services to promote diversification and food safety, in terms of research to increase nutrient content of crops, and in the promotion of fish as a source of nutrition. The linked Agricultural Market Development Plan 2004 (Zambia, Ministry of Agriculture and Cooperatives 2004) does not mention nutrition, and intersectoral action on nutrition is not mentioned specifically in the NAP.

### ***Other Relevant National Policies***

Zambia's land tenure is categorized into two main systems: customary and leasehold. A majority of land falls under the customary land tenure system controlled and allocated by traditional authorities (chiefs or kings), who grant land rights to subjects. Most ownership has no official title and landowners often cannot afford to cultivate it all, but do not rent it out or share it for fear that the land will be taken back. The government has been working on land reforms aimed at improving the land delivery process (FAO 2009). Zambia did not ratify the International Labor Organization's Maternity Convention 183 (2000) that provides protection for mothers and therefore child feeding. Zambia's Employment Act CAP 268 allows 90 days' maternity leave for all workers in formal employment, while its Statutory Instruments (SI) Nos. 56 and 57 provide 120 days' paid maternity leave for those in informal sectors, but these are not widely known or publicized. There is no law on breastfeeding breaks or childcare in workplaces in the formal sector.

### ***Regional and International Goals and Frameworks***

Zambia is working toward the Millennium Development Goals (MDGs) for 2015, but progress will need to quickly accelerate if it is to meet the target on child underweight. Zambia's nutrition policy, and particularly the NFNSP, has more recently aligned itself with the international Scaling Up Nutrition (SUN) movement of proven, effective, and cost-effective food and nutrition interventions; this initiative takes chronic malnutrition (stunting) as a major outcome, and emphasizes the roles of the health, agricultural, and broader sectors in addressing malnutrition. Zambia is an *early riser* country in signing on to this movement, and SUN has featured in several high-level ministerial speeches, but while it has an approved financial plan, it has not yet attracted national commitments of resources.

The Comprehensive African Agriculture Development Programme (CAADP) has nutrition and food security as one of its four pillars, and the African Union has developed an African Regional Nutrition Strategy (African Union 2005) that members have used to help upgrade nutrition policies,

strategies, and action plans. Zambia signed “pillar three” on nutrition in 2011; however, this now needs an investment plan to become a reality, so it is still a long way off in yielding anything tangible. The Eastern, Central, and Southern Africa Health Community (ECSA-HC) is promoting health and nutrition care interventions and advocating stronger links with agriculture and other sectors, and the Southern Africa Development Community (SADC) is trying to help countries adapt regional initiatives to country-specific situations (Zambia, Ministry of Health 2011).

Zambia is a signatory to the Innocenti Declaration (1990) and endorsed the World Declaration for Nutrition adopted by the International Conference on Nutrition (Rome 1992), the World Health Assembly Resolutions on Nutrition 47.5 (infant and young child nutrition, 1994), and the Global Strategy for IYCF (2002).

## **Institutions and Governance**

### ***Health and Nutrition Institutions and Leadership***

Since 1991, the Ministry of Health (MoH) has moved toward decentralization, with national-level structures providing support to provincial, district, and local structures. Within the MoH there are positions for nutritionists at each level; however, not all of these positions are filled and capacity across the positions varies due to an ongoing human resource crisis. The National Health Strategic Plan in 2005 noted that 65 out of a recommended 200 nutritionist positions at all levels were currently filled (Zambia, Ministry of Health 2005). Most nutrition training in Zambia is biased toward food science and technology (nutrition training ends at the diploma level, and those wishing to pursue it further obtain a food science and technology BSc/MSc), 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. A new BSc/MSc nutrition degree is being funded by the UK Department for International Development (DfID) to start in the academic year 2012/13 at the University of Zambia, run by the medical faculty but housed in the faculty of agricultural sciences, which may facilitate future intersectoral cooperation.

The National Food and Nutrition Commission (NFNC), under the MoH, is tasked with providing leadership on food and nutrition matters and has a broad mandate, including policy implementation, advocacy, and sensitization; monitoring, evaluation, and research; nutrition education and promotion; IYCF; micronutrient control programs; nutrition and HIV; and capacity building and human resource development. The five-year NFNC Strategic Plan 2005–10 (Zambia, Ministry of Health 2011) aimed to bring nutrition to the foreground with a well-resourced mandate for training, monitoring, and research. Although several nutrition-related policies were passed, the commission did not achieve the required strengthening of the nutrition agenda; the next national Five-Year Plan moved further toward food rather than nutrition security, and it was not until the government’s alignment with the international stunting agenda in 2011 that nutrition came back into national focus (Taylor 2012). The NFNC provides technical advice on food security, health and nutrition, and related disciplines, and there is a coordination mechanism for the National IYCF Program. This includes a multisectoral IYCF Coordinating Committee at the national level (established in 2007), but lower levels do not have IYCF committees and coordination is found to be weak or nonexistent.

### ***Food and Agricultural Institutions and Leadership***

The Ministry of Agriculture and Livestock (MAL) plays an active role in the development of agriculture in Zambia, with structures in place from the national through to the community level. The stated vision of MAL is to “promote development of an efficient, competitive and sustainable agricultural sector, which assures food security and increased income.” MAL has a food and nutrition section (FNS), ideally staffed at the national and district levels with one food and nutrition officer in each district, although this is not always the case. MAL advocates a food-based approach as the primary tool for improving the quality of the diet, improving nutrition, and supporting rural livelihoods. MAL’s main focus is on cereal crops such

as maize, cassava, sorghum, millet, sweet potato, and soybean, with limited activities on vegetable production.

MAL has in place Food and Nutrition Operational Guidelines (2008), which operationalize its mandate to provide food and nutrition extension services, particularly agro-processing, postharvest storage and preservation methods, and nutrition information to women and youth agricultural groups. The guidelines lay out the roles and responsibilities of MAL FNS staff at the national and subnational levels as regards planning, implementation, coordination, monitoring, reporting, and evaluation of nutrition-related programs and projects, with specific activities under capacity building of MAL staff and community members; nutrition and food processing and storage education; research into nutrition, HIV, and gender issues; M&E of programs; and supervision of MAL staff and management of work plans and budgets.

The Agriculture Consultative Forum (ACF) was formed to enhance coordination and consultation among government and private-sector stakeholders in the agricultural sector. They see themselves as a stakeholders' forum, a platform for policy advice, discussion, and commission of research to generate evidence-based policy advisory notes to the ministries and the president. Membership of ACF is drawn from various stakeholders, such as ministries, the Zambia National Farmers Union, the Agribusiness Forum, the Agro-based NGO Forum, the Programme Against Malnutrition (see below), and donors. The ACF is a forum for all farmers, including, but not particularly for, smallholder farmers.

The Zambia Food Reserve Agency (FRA), established in 1996 in accordance with the Zambian Food Reserve Act (1995) (Zambia 1995), is a company owned wholly by the government with a mandate to ensure national food security and farmer income by maintaining a national strategic food reserve. The FRA has the responsibility to purchase agricultural crops (maize, rice, and cassava from 2010) from vulnerable smallholder farmers.

### ***International Institutions and NGOs***

Zambia is awash with international agencies broadly involved in nutrition, including United Nations agencies (World Food Programme, UNICEF, FAO), bilateral donors (USAID, DfID, European Commission, Irish Aid), technical and research agencies (Zambia Agricultural Research Institute, International Institute of Tropical Agriculture, HarvestPlus), and a range of implementing NGOs. The following are of particular note for their intersectoral work on nutrition issues.

The Programme Against Malnutrition (PAM), an NGO with a mandate to improve the food and nutrition status of households in rural Zambia, was formerly very active, but recently downsized significantly; beneficiaries have been reduced from 135,000 to 6,000 as a consequence of a handing over of activities to the government and funding shortages. Their program activities aimed at increasing agricultural production, food processing and marketing, and building capacity for health centers to enable them to provide adequate behavior change communication and technical assistance to communities.

The International Institute of Tropical Agriculture is currently undertaking a research project called MIRACLE, aimed at making agricultural innovations work for smallholder farmers affected by HIV/AIDS in southern Africa. This involves a food consumption and nutrition survey in several agricultural camps to act as a baseline for assessing the nutrition impact of agricultural interventions.

HarvestPlus is active in Zambia, developing and disseminating a variety of vitamin A-rich maize, due for release in 2012, and aiming to provide 50 percent of mean vitamin A requirements.

Concern Worldwide is implementing the Realigning Agriculture to Improve Nutrition (RAIN) Project, a five-year program integrating agriculture and health interventions to reduce stunting in Mumbwa District. The project has two components: one is a process and impact evaluation of the RAIN project as implemented by the NGO, and the other is an assessment of a process aimed at coordinating the local-level agriculture and health ministries around nutrition for improved governance and implementation. The goals are to provide strong evidence of the impact of agricultural interventions on nutrition outcomes and to create a replicable model for sustainable implementation in other parts of Zambia.

## **Implementation**

### ***Nutrition and Health Programs***

Major direct interventions relating to nutrition are integrated into primary healthcare. These include a national breastfeeding program (supported by the Code of Marketing Breast Milk Substitutes), growth monitoring and promotion, participatory community-based nutrition activities, universal child immunization, and micronutrient control (including a vitamin A supplementation program and promotion of consumption of micronutrient-rich foods). Other programs include supplementary feeding for malnourished children and integrated management of childhood illness (IMCI); in practical terms, within the MoH, there is an emphasis on the treatment rather than the prevention of malnutrition. Data on underweight, vitamin A supplementation, and iodine coverage are supposed to be collected, but this happens only sporadically.

### ***Agriculture Programs***

The focus of national agriculture programs is on food security (staple crop sufficiency and access) and livelihood programs, with a focus on staple crop demonstrations to farmer groups and input subsidies. The government, through the MAL, provides public agricultural services, including research, extension, market information, crop surveys, cooperative registration, and agricultural training.

The Fertilizer Support Programme, now renamed the Farmer Input Support Programme (FISP), was launched by the government in 2002. The FISP provides subsidized (not free—subsidy has risen steadily from 50 percent at the start of the program to 75 percent currently) seed and fertilizer through the MAL and its extension structures to farmers who are members of agricultural cooperatives (which require payment for membership, and therefore exclude many poorer farmers). Inputs provided in the 2010–11 agricultural season were maize seed and fertilizer; newly introduced was the alternative of rice seed with half the amount of fertilizer in an effort to promote some crop diversification (Zambia, Ministry of Agriculture and Cooperatives 2010).

The Food Security Pack (FSP) was initiated as a short-term measure for three years starting in 2001, but it is still ongoing. The pack, funded by the government and initially implemented by PAM through local NGO networks, aimed to provide a basic level of farm inputs (cereal, pulse, and tuber seed, plus appropriate fertilizer) to households that have lost the ability to source such inputs themselves, encourage crop diversification in farmers' fields, and promote conservation farming practices in Zambian smallholder farming. The FSP is administrated by several ministries (Ministries of Community Development and Maternal and Child Health, Agriculture and Livestock, and Finance and National Planning), with a national steering committee made up of representatives of these three and other key stakeholders; it is such an example of intersectoral coordination for food security in Zambia (Ellis 2007).

## **Funding and Resources**

Zambia is a signatory to the 2001 Abuja Commitment of the African Union that calls for an allocation of at least 15 percent of the government's budget to the health sector. A large proportion of the health budget is allocated from external donors, and in 2009 there was a suspension of funding by cooperating partners (due to irregularities) that led to a reduction of the 2010 health budget by 25 percent from the 2009 level. Health spending was allocated at 30 percent of the national budget in 2011, at 1.8 trillion Zambian kwacha (ZMK).<sup>3</sup>

Zambia signed the Country Compact for the Comprehensive African Agriculture Development Programme (CAADP) in 2011. One of the main points in the CAADP is the increase in agricultural budget allocations to 10 percent of total spending (currently 6 percent). Between 2004 and 2010, the national agriculture budget varied between 5 percent and 8 percent of the total national budget

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<sup>3</sup> US\$/ZMK exchange rate at July 5, 2012, was around ZMK 5,000 to US\$1.

(increasing), but has yet to reach 10 percent; the agricultural budget for 2011 was ZMK 485 billion. Within the sector, the share of the agriculture budget allocations to FRA and FISP activities varied from 30 percent in 2008 to 62 percent in 2006; as a result, very little funding was available for the MAL's core functions. An estimated ZMK 1.5 trillion was needed to buy maize through the FRA in 2010,<sup>4</sup> with delays in payments for farmers due to delays in budget allocation. In some cases, the private sector supplements some of the government services, such as extension services offered by out-grower schemes and research by the various seed companies. The FISP was supposed to be a temporary subsidized input package for smallholder maize farmers lasting for three seasons, but the FISP is now open-ended, taking up a significant proportion of the MAL's total budget (around one-third in 2008). A recent report attributed far less of the increase in maize production to the FISP than is attributed to it by the MAL, and there are questions over transparency and accountability at the national and district levels, with little or no M&E system (World Bank 2010). The FSP receives funding under a budget line of the Ministry of Finance, but funding allocated was found not always to translate into funding received by the implementer. This lack of adequate funding has been seen as a coordination failure in itself, illustrating the differing priorities of the ministries involved, and the FSP has not reached its original targets for agricultural diversification, often distributing only maize seed and fertilizer, and thus directly competing for funds with the FISP (Ellis 2007). Overall, the government's approach to food security (FRA, FSP, and FISP) has been criticized for its piecemeal expenditure compared to potentially more sustainable and longer-term productive investments and investment in extension services, which may more fully empower small-scale farmers (Biodiversity Communication Network 2007).

Nutrition is highlighted as a lower priority area within the health sector, and budgetary allocation to nutrition is thus not prioritized. It was noted in the 2006–10 National Health Strategic Plan that around ZMK 96 billion would be needed over the five years of the plan for nutrition activities, with a majority of that funding projected for nutritional support of those living with HIV, and for vitamin A supplementation (Zambia, Ministry of Health 2005). Allocated funding through the health budget to “national food and nutrition services” in 2010 was ZMK 4.8 billion, with an additional ZMK 23 million for capacity building of nutritionists, ZMK 21 million for clinical nutrition training, and ZMK 3 million for development of nutrition education materials (Zambia, Department of Human Resource and Administration 2010). The NFNSP notes that “budgetary allocation for nutrition activities . . . has been declining” (Zambia, Ministry of Health 2011).

External funding for food and nutrition programs is mainly from several key donors: UNICEF (child nutrition programs), USAID (Feed the Future Initiative, Food and Nutrition Technical Assistance [FANTA] project, and the Infant and Young Child Nutrition [IYCN] project), and DfID (an important donor for food security in Zambia, and the biggest funder of SUN).

## **Critiques and Studies of Zambia's Nutrition-Related Policies and Institutions**

In 2008, the NFNC, aided by the International Breastfeeding Action Network, undertook an assessment of IYCF that revealed several gaps in implementation, including inadequate funding and a lack of integration of IYCF with the annual plans of sectors other than health. Code monitoring conducted in 2006 indicated several violations that need to be addressed, and the law better enforced; development of an enforcers' manual; training of law enforcers; and sensitization of manufacturers, wholesalers, retailers, and health workers have been recommended. Several gaps have been identified in the HIV nutrition recommendations, including inadequate staff training and availability and a weak monitoring system, and recommendations have been provided on how to improve these (World Breastfeeding Trends Initiative 2008).

A recent study (Aberman 2010) on the promotion of biofortified crops in Zambia looked at linkages between actors in different sectors around this specific nutrition issue. Key institutions were identified as the NFNC and PAM due to their unique placement in both collaboration and advocacy with

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<sup>4</sup> “Bumper Harvest to Cost K1.5tn – Rupiah,” *Lusaka Times*, October 9, 2010.

various stakeholders on nutrition issues. The NFNC has, however, been regarded as weak, with lack of effective coordination and focused leadership (Zambia, Ministry of Health 2011).

Several studies have attempted to classify countries' standing on the governance of nutrition issues in the past few years, using various methods and indices. In 2009, Zambia's readiness to accelerate action on nutrition issues was classified as "medium" using a composite score that looked at commitments in PRSP and United Nations Development Assistance Framework documents and a measure of nutrition governance, including elements of intersectoral collaboration; existence of nutrition plans, policies, and programs; and allocation of budget (Engesveen et al. 2009). The report also compares this classification to a country's progress on reducing undernutrition toward the Millennium Development Goals ("insufficient progress" in the case of Zambia) but finds no consistent link between governance by this measure and reductions in undernutrition. In 2010, Zambia was ranked 19th out of 28 developing countries assessed using the ActionAid HungerFREE Scorecard, which looked at hunger outcomes and trends, agriculture, social protection, the legal framework for nutrition, and gender issues (ActionAid 2010). And a 2011 study developing a "hunger reduction commitment index" to assess a country's commitment to nutrition issues ranked Zambia 20th of 21 countries overall in an index derived from a study of legal frameworks (21st of 21), government expenditures (10th), and policies and programs (18th) (te Lintelo et al. 2011). Zambia therefore scores poorly on these various indices of nutrition governance.

A study in 2012 looking specifically at the governance of nutrition in Zambia (Taylor 2012) assessed three main pillars: horizontal coordination among sectors, vertical coordination within policy and implementation systems, and funding. The review notes that none of these pillars has been adequately addressed in Zambia due to several factors, including lack of qualified nutrition staff, lack of funding in the nutrition sector, and issues with the NFNC; this last point includes the placement of the NFNC under the MoH, with a subsequent dividing of the nutrition agenda into curative (health) and food-based (agricultural) and lack of a strong mandate for either intersectoral work or vertical coordination for implementation. The report notes that the recent change of government in Zambia should not pose a threat to nutrition programs or policies, and the recent ratification of the SUN movement in the country holds potential for a renewal of the nutrition agenda. However, it is noted that for now, nutrition mandates remain sectoral and uncoordinated, the NFNC remains weak, nutrition programs remain underfunded, and there is a lack of consensus and high-level political will to tackle malnutrition in a coordinated manner. The report offers several suggestions for improving the situation, including lobbying for high-level political buy-in and reconnecting the NFNC to a higher level body, such as the Ministry of Finance or the Office of the Vice President, to strengthen its mandate; creating consensus around the stunting agenda; improving coordination between agriculture and health at the district and community levels; improving monitoring and data collection on nutrition issues; and improving financial management and accountability to allow donors to collaborate effectively with government.

## 5. APPLYING LESSONS LEARNED TO THE ZAMBIAN CONTEXT

Zambia is a relatively politically stable country with plenty of natural resources and a vision of poverty reduction and economic growth; it is therefore an ideal candidate for a country that could make a significant impact on its malnutrition problem. With the emergence of the SUN movement in the country, nutrition has received some high-level political attention, and nutrition is recognized in overarching development policies and strategies. There is a logical progression of nutrition policy and planning documents from these; the National Food and Nutrition Policy (NFNP) and National Food and Nutrition Strategic Plan (NFNSP) are comprehensive in scope and ambitious in reach. However, political attention has not moved into concrete action, and each of these strategies, policies, and plans is essentially a wish list noting best practice; confined mainly to the health sector; and created with substantial input from external actors but without the backing of political commitment, budgetary or human resources, or capacity. This hints at a disjuncture between policymaking and reality, and implementation of these grand ideas is severely lacking.

Despite some favorable structures and policies at the national and subnational levels, there is little evidence of coordination between the agricultural and health sectors on nutrition in Zambia. Focus on nutrition remains with a small group of interested individuals in Lusaka, and the reach of advocacy surrounding nutrition generally is confined to those in the nutrition sector. There needs to be a concerted effort to change this if the space is to be made for action on nutrition in general and coordination for nutrition in particular. Zambia is a SUN signatory and has ratified a financial plan to support the movement, and this is a key opportunity to create a consensus around stunting to bring the issue both up—demanding more than lip service from ministers—and down—creating demand for reduced malnutrition in the community at large. It is clear from the policies and plans reviewed that currently the Ministry of Health (MoH) is the only ministry to explicitly address nutrition, apart from some small, project-based initiatives from the Ministries of Agriculture and Livestock, and Community Development and Maternal and Child Health. Clear, concise, and targeted information—a policy narrative framing the nutrition problem in context and highlighting gains for all parties—is needed to improve coordination on the issue. Clarifying the major nutrition problem in the Zambian context and framing the narrative to spell out the advantages to all parties in tackling malnutrition are the first steps toward coordination of nutrition aims and objectives between the agricultural and health sectors. The National Food and Nutrition Commission (NFNC) should assume this advocacy role and significantly step up efforts in this window of opportunity that exists around SUN to engage outside of the routine nutrition and health actors, and more broadly than the nutrition cadre in Lusaka.

The NFNC itself, in place for more than 40 years, has not fulfilled its full potential as a force for nutrition advocacy, planning, and implementation in Zambia, and the commission has not yet managed to play its role in convening actors from the different sectors relevant to nutrition. There is little incentive (financial or otherwise) for cooperation among different ministries for nutrition, and the NFNC currently has little intersectoral credibility or authority to make this happen; its placement under the MoH severely limits its mandate for intersectoral convening or mobilization, and it cannot offer incentives nor impose sanctions for more collaborative action. The emergence of SUN, however, has raised the profile of the NFNC, and this could potentially shift more emphasis onto the commission going forward; if the NFNC is able to raise the funds identified for SUN, then it may increase its ability to mobilize and incentivize relevant actors across sectors. Another strategy might be to move the NFNC to a more overarching ministry, such as the Office of the Vice President, with more power to convene actors and mobilize resources from different sectors; however, although this might imply power, without a political champion driving nutrition or effective advocacy creating a space in which to work, little may be achieved. Decentralization is Zambia's stated policy, and more effective action on nutrition is often seen at local levels; starting cooperation for nutrition at the decentralized level might also yield positive results.

There are very few nutritionists at any level in Zambia, and technical capacity is constrained by the lack of training opportunities beyond the diploma level. Much action on nutrition is implemented by

outside agencies or pushed by external donors, which does not strengthen the capacity or incentives for work on nutrition by government agencies. A new degree course in nutrition at the University of Zambia, run by the faculty of medicine but housed in the agricultural sciences building, is an opportunity for building technical capacity in the country, and if done well could foster cross-sectoral understanding in technical nutritionists. Although technical capacity of the NFNC, tasked with oversight and implementation of nutrition policies and programs, is adequate, it is unclear whether the NFNC has the strategic capacity required for relationship building and intersectoral action. The strategic capacity of the leadership of the NFNC needs to be improved, to increase its understanding of the motivations of the different sectors and strengthen its ability to forge partnerships and balance the power of the different ministries involved.

Several vital but attainable processes would therefore improve intersectoral coordination for nutrition in Zambia and enable its potentially strong policy to be implemented across sectors. These include strategic lobbying for real political and social commitment to nutrition in general, and in sectors outside of health; strengthening the NFNC's power to convene and mobilize the different actors as well as the strategic capacity of its leadership; and improving technical training outside of core nutrition competencies in nutrition workers in general. These recommendations are interlinked; one cannot happen without the other, and all are necessary but not sufficient to improve the nutrition situation in Zambia. Movement should start in all areas, and the high-level momentum created by the SUN movement is an opportunity for cross-sectoral dialogue and increased resources that should not be missed.

### **Limitations**

It was difficult to access the documents needed for the Zambian institutional analysis, because there is no central repository of nutrition-related documents in particular, or of government policy and program documents in general. Although this was overcome to some extent by convening a feedback meeting with representatives of the ministries and bodies that work on these issues day-to-day, this lack of access to relevant materials also has implications for intersectoral working in Zambia: even if good policies exist, it is likely that only those within a small section of each ministry are aware of them. A final limitation relates to the external nature of the authors to the national nutrition processes in Zambia, and a subsequently imperfect view of the situation. However, it is hoped that the systematic methods employed in the literature review and institutional analysis have to some extent overcome this and produced a useful set of recommendations.

## APPENDIX: ADDITIONAL TABLES AND BOX

**Table A.1—Definitions on the continuum of integration**

Summary of selected studies detailing definitions of integration on a continuum, from top (less integration) to bottom (more integration)				
Kalegaonkar and Brown 2000	Flynn 2002	Himmelman 2002	Boon 2004	Shigayeva et al. 2010
			<p><b>Parallel</b> Independent healthcare practitioners working in a common setting; each individual performs his/her job within his/her formally defined scope of practice</p>	<p><b>No formal interaction</b></p>
	<p><b>Meetings, no action</b> The process produces unproductive meetings. People are invited as representatives of their organization; the lead organization proceeds ; the criterion by which collaboration is judged is whether the meetings took place, whatever their content or outcome</p>			
		<p><b>Networking</b> Exchanging information for mutual benefit</p>	<p><b>Consultative</b> Expert advice is given from one professional to another</p>	
			<p><b>Collaborative</b> Practitioners share information concerning a particular patient; ad hoc and informal on a case-by-case basis</p>	<p><b>Linkage</b> Unstructured interactions; not necessarily goal-oriented; may have signed agreement; objectives, structures and functions maintain separation</p>
	<p><b>Joint bid</b> Partners bring their experience and interests; real exchanges and joint analysis of problems and proposals; revert to previous competitive behaviors</p>	<p><b>Coordinating</b> Networking, plus altering activities to achieve a common purpose</p>	<p><b>Coordinated</b> Formalized administrative structure; requires communication and sharing of patient record ; team intentionally gathered to provide treatment for a particular disease or to deliver a specific therapy; a case coordinator is responsible</p>	<p><b>Coordination</b> Goal-oriented interactions; policy or strategy to address an issue; sharing information; implementing certain activities together, including sharing human and financial resources; usually a coordinating committee or person; objectives, structures, and functions maintain separation</p>

**Table A.1—Continued**

Summary of selected studies detailing definitions of integration on a continuum, from top (less integration) to bottom (more integration)				
Kalegaonkar and Brown 2000	Flynn 2002	Himmelman 2002	Boon 2004	Shigayeva et al. 2010
			<b>Multidisciplinary</b> Characterized by teams, managed by a leader; each team member continues to make his/her own decisions and recommendations; formalized outgrowth of coordinated practice	
			<b>Interdisciplinary</b> Emerges from multidisciplinary practice; practitioners begin to make group decisions; regular, face-to-face meetings	
<b>Cooperation</b> Bringing actors to achieve mutual understanding on an issue and negotiate and implement mutually agreeable plans for tackling it	<b>Cooperation</b> Each organization retains its own specialty but works with the others on projects or programs; retains staff under their previous management arrangements ; may coordinate activities, but there is essentially no change to management arrangements; agreement about the objectives and values of the project	<b>Cooperating</b> Coordinating, plus sharing resources to achieve a common purpose		
	<b>Collaboration</b> Involves a shared task with shared management and supervision of staff; adjust to others' professional values and ways of working	<b>Collaborating</b> Cooperating, plus enhancing the capacity of another to achieve a common purpose		
	<b>Joint budgets</b>			
	<b>Merger/acquisition</b>		<b>Integrative</b> Interdisciplinary, nonhierarchical blending; provides a seamless continuum of decisionmaking and patient-centered care; based on a specific set of core values; employs an interdisciplinary team approach; consensus building, mutual respect, and a shared vision	<b>Integration</b> Bringing programs together (merging) or bringing together a program's structures and functions

Source: Summaries by the authors.

**Table A.2—Food fortification in Zambia**

<b>Product</b>	<b>Mandate</b>	<b>Nutrient</b>	<b>Levels/kg</b>
Sugar	Government of Zambia Statutory Instrument No. 90 of 2001	Vitamin A (as retinol)	Not less than 10 mg/33,000 IU
Maize Meal	Government of Zambia Statutory Instrument No. 90 of 2001	Vitamin A (as retinol)	1,700 RE/5,661 IU
		Vitamin B1	2.4 mg
		Vitamin B2	2.0 mg
		Vitamin B6	2.4 mg
		Folic acid	0.4 mg
		Niacin	22.4 mg
		Iron	12.0 mg
Flour	Government of Zambia Statutory Instrument No. 90 of 2001	Zinc	12.0 mg
		Vitamin B1	Not specified
		Vitamin B2	3.3 mg–4.5 mg
		Nicotinic acid	35.5 mg–44.4 mg
		Iron	28.9 mg–36.7 mg

Source: [http://food-fortification.com/Files/Download/Resources/MANDATORY\\_FOOD\\_ENRICHMENT\\_neu.pdf](http://food-fortification.com/Files/Download/Resources/MANDATORY_FOOD_ENRICHMENT_neu.pdf).

Notes: IU: International units; RE: retinol equivalents.

## Box A.1—Draft Zambia National Food and Nutrition Strategic Plan strategies

<p><b>1. Strategies for 1,000 critical days: Prevention of stunting in children under two years of age</b></p> <ul style="list-style-type: none"> <li>Expand and enhance integration of high-impact maternal and child nutrition interventions focusing on the 1,000 most important days. This will likely involve development of a nationwide program to be designed with broad cross-sector and civil society participation and rapid but phased implementation supported by well-designed monitoring and communication support elements.</li> <li>Develop a costed funding strategy seeking resources from multiple sectors, and substantial funds from international sources committed to scale Up of nutrition (SUN).</li> <li>Plan and generate necessary buy-in from leadership, sector ministries, and other stakeholders at national and subnational levels and begin implementation of a national “1,000 Critical Days Program to Prevent Stunting in Children Under Two Years of Age.”</li> </ul>
<p><b>2. Strategies for increasing micronutrient and macronutrient availability, accessibility, and utilization by improving food and nutrition security</b></p> <ul style="list-style-type: none"> <li>Promote sustainable production, processing, preservation, storage, consumption, and marketing of a variety of food crops (especially legumes, vegetables, and fruits), fish, and livestock.</li> <li>Strengthen public–private partnerships and support for food fortification.</li> </ul>
<p><b>3. Strategies for early identification, treatment, and follow-up of acute malnutrition</b></p> <ul style="list-style-type: none"> <li>Finalization and implementation of new national protocols for the management of severe acute malnutrition at hospital, clinic, and community levels.</li> <li>Strengthen community groups (community health workers, nutrition groups, and so on) roles regarding acute malnutrition in children.</li> <li>Increase resources to support community-level resources for management of moderate and severe acute malnutrition.</li> </ul>
<p><b>4. Strategies for nutrition education and nutritious feeding through schools</b></p> <ul style="list-style-type: none"> <li>Expand and strengthen school health and nutrition (SHN) program interventions countrywide.</li> <li>Institutionalize home-grown school feeding (HGFS) program.</li> <li>Advocate for the improvement of appropriate water and sanitation facilities in all schools to cater to all learners, including those with special needs and girls.</li> </ul>
<p><b>5. Strategies for increasing linkages between nutrition and infection control through hygiene, sanitation, and safe water</b></p> <ul style="list-style-type: none"> <li>Improve access to safe household drinking water.</li> <li>Improve hygiene and sanitation promotion through safe feces disposal and proper and frequent hand washing with soap.</li> </ul>
<p><b>6. Strategies for food and nutrition to mitigate HIV and AIDS</b></p> <ul style="list-style-type: none"> <li>Advocate for mainstreaming food and nutrition as an integral part of comprehensive HIV management and support for those infected and affected by HIV and AIDS.</li> <li>Strengthen community–clinic linkages on nutrition support for PLHIV and affected families</li> <li>Strengthening the community HIV programs’ nutrition support capacity.</li> </ul>
<p><b>7. Strategies for improving food and nutrition to prevent and control noncommunicable diseases</b></p> <ul style="list-style-type: none"> <li>Strengthen nutrition-related aspects of NCDs national control programme</li> </ul>
<p><b>8. Food and nutrition preparedness and response to emergencies</b></p> <ul style="list-style-type: none"> <li>Develop and implement training in key areas of food and nutrition in the context of emergency preparedness and disaster risk reduction and response</li> </ul>
<p><b>9. Strategies for strengthening governance and capacity building in support of food and nutrition interventions</b></p> <ul style="list-style-type: none"> <li>Position food and nutrition on the national development agenda.</li> <li>Build institutional and human capacity for the effective delivery of nutrition services, including the design, development, and implementation of relevant nutrition programs, projects, and interventions.</li> <li>Establish strategic and operational partnerships and alliances with private, public, and civil society organizations in food and nutrition.</li> </ul>
<p><b>10. Strategies for food and nutrition intervention monitoring, evaluation, and research to support improvement and expansion</b></p> <ul style="list-style-type: none"> <li>Use evidence-based information for nutrition program design.</li> <li>Strengthen food and nutrition results-oriented monitoring and evaluation system.</li> </ul>
<p><b>11. Strategies for expanding communication and advocacy in support of food and nutrition interventions</b></p>

Source: Zambia, Ministry of Health 2011.

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