AID FOR NUTRITION

Using innovative financing to end undernutrition

ACF INTERNATIONAL

IDS Institute of Development Studies

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Using innovative financing to end undernutrition

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Action Against Hunger's mission is to save lives by eliminating hunger through the prevention, detection and treatment of undernutrition, especially during and after emergency situations of conflict, war and natural disaster. From crisis to sustainability, we tackle the underlying causes of undernutrition and its effects. By integrating our programmes with local and national systems we further ensure that short-term interventions become long-term solutions.

Save the Children works in more than 120 countries. We save children's lives. We fight for their rights. We help them fulfil their potential.

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GLOSSARY

AAUs	Assigned Amount Units
ACF	Action Against Hunger | ACF International
AMC	Advance Market Commitment
BMGF	Bill and Melinda Gates Foundation
BRICS	Brazil, Russia, India, China and South Africa economies
CIFF	Children's Investment Fund Foundation
CMAM	Community Management of Acute Malnutrition
CO^2	Carbon Dioxide
DAC	Development Assistance Committee
DG TAXUD	The European Commission's Taxation and Customs Union Directorate General
DIBS	Development Impact Bonds
ETS	European Trading System
EU	European Union
FTTs	Financial transaction taxes
GAVI	Global Alliance for Vaccines and Immunization
GDP	Gross Domestic Product
GMBMs	Global market-based mechanisms
GNI	Gross National Income
GPGs	Global Public Goods
IFFIm	International Finance Facility for Immunization
IFM	Innovative Financing Mechanism
IMF	International Monetary Fund
MAM	Moderate Acute Malnutrition
MBMs	Market-based Mechanisms
MDG	Millennium Development Goals
M&E	Monitoring and Evaluation
MNC	Multi-National Corporations
NGOs	Non-governmental Organisations
ODA	Overseas Development Aid
OECD	Organisation Economic Cooperation and Development
R&D	Research and Development
RRMs	Revenue Reclaim Mechanisms
SAM	Severe Acute Malnutrition
SBBC	Social and Behaviour Change and Communication
SUN	Scale Up Nutrition
SIB	Social Impact Bond
UN	United Nations
UNDP	United Nations Development Programme
WB	World Bank
WHA	World Health Assembly

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EXECUTIVE SUMMARY

Focusing on the 36 countries with a high burden of undernutrition, this report builds upon an earlier report, *Aid for Nutrition: Can investments to scale up nutrition actions be accurately tracked?*, which documented the inadequacy of current spending on nutrition, highlighted major problems with current reporting practices and proposed a series of reforms to address these (ACF 2012). Considering the scale of undernutrition, the report indicated that the need for the additional estimated annual investment of US$11.8 billion (estimated by the World Bank in 2010) is greater than ever.

The current study examines three different, though related, questions: How much funding is required to achieve the Scaling Up Nutrition (SUN) objectives for direct nutrition-specific interventions over the next ten years? How can this funding be allocated between domestic and external sources within the SUN framework? How can the funds which are coming from external donors be raised?

The report draws on the costings and delivery assumptions of the World Bank costing study by Horton *et al*. (2010), which is a key document for the SUN Movement and is currently the best source of funding estimates.

A range of options for both funding requirements and funding allocations are presented and discussed in addition to an exploration of some of the options available to external donors to raise the necessary funds. The aim of the report is not to argue for any particular approach, but rather to highlight the importance of what might appear to be rather abstract questions, but which could actually have significant implications.

The report finds that:

- The nutrition specific interventions with the largest implied domestic contributions are Social and Behaviour Change and Communication (SBCC) and treatment of Severe Acute Malnutrition (SAM). Therefore the poorest developing countries with the largest burdens of undernutrition could bear the highest costs of scaling up nutrition.
- The proposal by Horton et al. for a two step process to scale up nutrition, where Step 1 focuses on capacity building, could see domestic contributions as a share of total costs rise significantly, especially for nutrition interventions such as SBCC and SAM treatment which rely heavily on labour.

A range of options for burden sharing between domestic and external financing are presented and the advantages and disadvantages of each are considered. Whichever option is chosen, the report aims to a) draw attention to the importance of addressing this question openly and fairly with a 'level playing field' for all countries and b) highlight the fact that there may be significant consequences resulting from the different options which require a step change in the current funding mechanisms for nutrition.

The report also considers various options to raise external finance. Option 1 distributes additional funding needs between DAC donors on an equitable 'fair shares' basis, based on current and projected national income. Option 2 considers an alternative, 'blended' funding model, where additional Official Development Assistance (ODA) is complemented by 'innovative finance' mechanisms. Again, a range of options, rather than a definitive solution, are considered.

By proposing ways in which the costs of scaling up nutrition can be equitably and effectively shared and by suggesting innovative financing mechanisms, it is hoped that this report will prompt donors and SUN signatory countries, as well as others with high undernutrition burdens, to invest in scaling up nutrition. It should also provide essential guidance for the SUN Movement and other stakeholders as they deliver on their commitments to support national governments to scale up nutrition.

Our recommendations are as follows:

1. Given the chronic underinvestment in proven, cost-effective, nutrition-specific interventions, donors and national governments must scale up investments in nutrition in both development and humanitarian contexts.
2. Donors should explore and trial innovative financing to provide long-term, sustainable and predictable funding for the full nutrition package which is aligned with complementary initiatives in health, food security and agriculture.
3. The SUN signatory countries must demonstrate their commitment to scaling up nutrition by costing national nutrition plans by the end of 2012.
4. The SUN Leadership, donors and SUN signatory countries should work together to develop a systematic, equitable and transparent mechanism for the sharing of costs between domestic and external sources so that countries receive adequate assistance in proportion to their needs.
5. The OECD needs to improve monitoring and evaluation of the nutrition financing activities of donors to allow 'best practices' to be identified, understood and replicated.
6. The OECD should align domestic and external reporting procedures in order to improve accountability for nutrition financing.
7. Donors, academia and civil society should complement the extensive research on direct interventions with a similar process for indirect interventions that will address the underlying drivers of undernutrition in order to avoid tackling the issue with a fragmented approach.

While the funding to scale up nutrition may appear large in nominal terms, the SUN Framework is a vital investment with very high development returns which addresses all forms of undernutrition. Put simply, full and successful implementation of the framework will mean that unnecessary deaths and mental and physical disability due to acute, chronic and micronutrient undernutrition will be avoided.

Furthermore, donors and governments should recognise that the developmental gains of tackling undernutrition will be undermined or reversed by a failure to prepare and respond adequately to humanitarian crises. Investments in nutrition should be allocated alongside investments in preparedness in order to build resilience to future humanitarian emergencies.

1. INTRODUCTION

This report builds upon an earlier Action Against Hunger | ACF International (ACF) study[1], which documented extremely low levels of financial investment in nutrition, highlighted major problems with current reporting practices, and proposed a series of reforms to address these. Undernutrition is the silent killer of 3.5 million mothers and children each year[2]. The Framework for Scaling-Up Nutrition (SUN) is a response to the continuing high levels of under-nutrition in our world and the uneven progress towards the Millennium Development Goal (MDG) — set in 2000 — to halve poverty and hunger by the year 2015. The SUN framework was developed by specialists from governments, academia, research institutions, civil society, private companies, development agencies, UN organizations and the World Bank. Focusing on the 36 high burden countries[2], the current study examines three different, though related, questions: first, building on the World Bank work of Horton *et al.*(2010), a key document for the SUN Movement (organisations, donors and countries who endorse the SUN Framework), we consider how much funding is required to achieve the SUN objectives in terms of direct nutrition-specific interventions over the next ten years; second, we examine the implications of different ways of allocating this funding between domestic and external sources within the SUN framework; third, we explore options for how the necessary external revenues could be raised.

A number of caveats are needed at the outset. First, our focus is on the 13 direct nutrition interventions, also known as nutrition-specific interventions. This does not mean that we consider indirect interventions unimportant. The long-term sustainability of direct interventions is dependent upon a complementary framework of direct and indirect nutrition interventions, implemented in a positive, 'enabling environment'. Such a holistic response to all forms of undernutrition requires patterns of growth to be 'inclusive', particularly with respect to the unacceptably high levels of inequality in many countries today. Despite the importance of addressing nutrition in this holistic way, the question of how to fund direct interventions remains very important and valid on its own terms in this study. Furthermore, our understanding of what works is considerably more advanced for direct, rather than for indirect nutrition interventions.

Second, while recognising the crucial importance of domestic resource mobilisation — and country ownership more broadly — our primary focus here is on external financial resources. As well as having rather different drivers to domestic resource mobilisation, there is value in considering what the appropriate level of external financing should be, as well as where and how this financing should be obtained. As countries draw up their national SUN implementation plans, the question of the appropriate split between domestic and external funding is an important consideration.

Third, the question of the appropriate domestic-external split needs to be answered systematically, rather than on a country-by-country basis. It is important that this issue is approached fairly and with transparency, with SUN signatory countries knowing that their level of domestic contribution is broadly in line with that of other countries. In this paper we explore the implications of one way of making this split, where donors pay for the cost of materials, while in-country labour and implementation costs are met from domestic resources.[3] While we do not suggest that this is the only way of determining the appropriate ratio, this 'rule of thumb' does broadly reflect historical practice.

As we shall see, following this practice could result in inequitable outcomes. Our aims, therefore, are to: a) draw attention to the importance of addressing this question openly and fairly with a 'level playing field' for all countries; and b) highlight the fact that there may be significant distributional consequences resulting from this decision, and thereby focus minds on the importance of thinking the question through carefully.

The World Bank costing study of Horton *et al.* (2010) is a key document for the SUN Movement, and the best current source of funding estimates. Accordingly, we have drawn on its costing and delivery assumptions

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throughout the current report. Our fourth caveat, however, is that this should not be taken as an endorsement of the approach proposed in this document. Rather, we have sought to tease out the implications were this approach to be implemented, and in the process make a contribution to the debate and success of SUN implementation more generally.

A range of options on how best to distribute costs between external and domestic sources is presented. The aim is not to argue for any particular approach, but rather to shine a light on the importance of what might appear to be rather abstract questions, but actually have significant implications.

We also explore the implications of the two-step[4] SUN process proposed in Horton *et al*. Again, the results suggest the need for some transitional changes to current practice on sharing costs between external and domestic sources.

The report then considers options to raise external finance. Option 1 distributes additional funding needs between Development Assistance Committee (DAC) donors on an equitable 'fair shares' basis, based on current and projected national income. Option 2 considers an alternative, 'blended' funding model, where additional official development assistance (ODA) is complemented by 'innovative finance' mechanisms. Again, a range of options, rather than a definitive recommendation, is considered.

Despite preferring to keep these options open, our findings are clear in other respects. Although the increase in funding that scaling up nutrition requires is large in nominal terms, relative to the potential benefits, the resources needed are actually quite small. As argued by the Copenhagen Consensus,[5] the benefit to cost ratios of nutrition interventions make them excellent 'investments' with very high development 'returns'. Indeed, of the top five development interventions recommended in 2012, nutrition accounted for two.[6]

Raising the necessary funds is only part of the story, however. The SUN Movement was designed to provide a framework to increase commitment and above all to promote the need for a multisectoral approach to address all forms of undernutrition. As SUN Movement stakeholders we support these goals, but we also should place particular emphasis on addressing conditions that contribute most to child mortality such as wasting. Direct treatment interventions to save lives, and preventative actions to improve the quality of life of the worst affected populations, are both equally essential. Investments also need to be made in a transparent and coordinated way, which makes the issue of harmonizing reporting standards addressed in the companion study to this report particularly important.

Transparency is not an end in itself, but is essential if stakeholders to the SUN Movement are to ensure that the right services reach those that most need them, where and when they are most required. Learning about what works best, and sharing this information, is a crucial aspect of transparency. While we know a lot about which interventions are most effective, we know less about how they can be best delivered, particularly at the scale required. As the SUN process develops, it will be vital to track outcomes in this regard, so that the efficiency, cost-effectiveness and accountability of the process can be progressively improved.

It is hoped that this work may help SUN signatory countries as they draw up national implementation plans, as well as the SUN Secretariat, donors and other stakeholders as they deliver on their commitments to support national governments. The paper will also show how costs to scale up nutrition can be equitably and effectively raised as well as shared.

The report is structured as follows. Section 1.1 gives some background on the SUN Movement, and briefly reviews the case for financial support. Section 2 updates and extends the regional and global cost estimates developed in 2010, with the aim of highlighting the global scale of the challenge, but also the differential rates of progress in different countries and regions. Section 3 considers the potential sources of external funding to meet this challenge, with a

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specific focus on the domestic-external funding ratio. Section 4 examines the implications of the two-stage scale up of nutrition proposed in Horton *et al.* (2010), while Section 5 discusses external funding options based on additional ODA from traditional donors. Section 6 introduces some alternative, 'innovative' options for raising external finance, and Section 7 distils some policy recommendations and concludes.

1.1 WHAT IS THE SUN AND WHY SHOULD IT BE FUNDED?

Undernutrition is one of the two main forms of malnutrition (the other being overnutrition). It can be defined as the insufficient intake or absorption of calories or nutrients due to acute or chronic food shortages, illness or poor care practices. Those suffering from undernutrition have inadequate intakes of energy (macronutrients) as well as essential vitamins and minerals (i.e. micronutrients), which leads to conditions such as chronic or acute malnutrition and 'hidden' hunger (stunting[7] and wasting,[8] and vitamin and mineral deficiency diseases respectively). Undernutrition is responsible for approximately 4.5 million deaths per year.[9]

The first thousand days in a child's life are critical in determining their future. Maternal and infant undernutrition cause many early deaths of both mothers and children, but also physical and mental disabilities that may not be reversable if they are not treated or prevented within this critical period. The result is a long-term poor quality of life for both. The direct human costs in economic terms are large: it is estimated that adults who have been affected by undernutrition earn a fifth less than those who are not.[10]

The cumulative effects on national economic development of undernutrition are profound: the GDP of developing countries is reduced by 2-3% per year because of the effects of undernutrition.[11] Globally, the direct costs of undernutrition in children have been estimated at US$20-US$30 billion per year.[12]

Despite these severe human and economic costs, undernutrition has been a relatively neglected issue for decades, except for when it reaches emergency levels during humanitarian crises. As a result, progress has been slow, inconsistent and unsustained. But this is not due to a lack of understanding.

The Lancet Maternal and Child Undernutrition series was first published in 2008.[13] Building on earlier studies, the series identified direct nutrition interventions (more recently known as nutrition-specific interventions) with the greatest potential impact on child mortality and future disease burdens. The World Bank estimated the cost of implementing 13 of these interventions at scale. As described above, to be effective these direct interventions must be implemented within the first 1,000 days of a child's life. It is important to note, however, that the prevention of undernutrition also includes adequate nutrition-sensitive programmes and approaches that are not the subject of this paper.

The Scaling up Nutrition (SUN) Movement was formed in 2009 and describes its purpose as follows:

> "*The Framework for Scaling-Up Nutrition (SUN) is a response to the continuing high levels of under-nutrition in our world and the uneven progress towards the Millennium Development Goal (MDG) — set in 2000 — to halve poverty and hunger by the year 2015. Success with this MDG is critical for equitable economic and social development, and to the realization of all the MDGs. The SUN framework has been developed by specialists from governments, academia, research institutions, civil society, private companies, development agencies, UN organizations and the World Bank. It has been endorsed by more than 100 organizations and was unveiled in Washington in April 2010.*"[14]

The evidence in favour of investing to scale up nutrition interventions is very strong, but this is also true of other forms of development intervention. What clinches the argument in favour of the bundle of 13 nutrition-specific interventions is their very high benefit to cost ratios. Indeed, two of the five most cost effective interventions proposed by the 2012

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Copenhagen Consensus are nutrition focused. In a background paper for the 2012 project, Hoddinott *et al*. (2012: 42) describe the cost-benefit case for a bundle of these interventions:

> *"A novel estimate that we provide is for investments that will allow the scale up of a bundled set of interventions that reduce the prevalence of stunting. Under the most conservative assumptions that we consider, these yield a benefit: cost ratio of 15. If we relax these, the benefit: cost ratio rises to somewhere between 23.8 and 138.6. In the country with the largest number of undernourished children in the world, India, these benefit: cost ratios lie between 44 and 138.6."*

In the remainder of this report we consider the implications of scaling up nutrition for the direct (or nutrition-specific) interventions. As described above, this should not be taken to mean that we do not endorse all aspects of the SUN Framework, nor that other important nutrition challenges would not remain even if the SUN Framework were to be fully implemented. Perhaps most importantly, the estimated costs of implementation of nutrition interventions at scale deals only with direct interventions. A similar approach to understanding the channels of impact, identifying the most effective approaches, and costing these rigorously has not been done for indirect nutrition interventions. This remains a major challenge and should be the focus of further research.

[1] *ACF (2012), Aid for Nutrition: Can investments to scale up nutrition actions be accurately tracked?*
[2] *Estimates taken from the Lancet (2008) series. The 36 high burden countries were estimated as accounting for 90% of the world's stunted children.*
[3] *Personal correspondence with Susan Horton, lead author of the 2010 World Bank costing study*
[4] *See Horton et al. (2010: 47-49) for details of the proposed 2 step approach. Step 1 focuses on behaviour change interventions, micronutrients, deworming and capacity building, while Step 2 incorporates complementary and therapeutic feeding into the full-scale package.*
[5] *Starting in 2004, the Copenhagen Consensus attempts to prioritise development interventions in terms of effectiveness relative to cost. Expert panels have convened at regular intervals to address this question, which in the 2012 version was as follows: If you had $75bn for worthwhile causes, where should you start? http://www.copenhagenconsensus.com*
[6] *The intervention ranked first by the Copenhagen Consensus, based on potential development returns on investment, is Bundled Interventions to Reduce Undernutrition in Pre-Schoolers. Deworming of schoolchildren is ranked fourth.*
[7] *Below-2 standard deviations or more below the median of the height-for-age child growth standards of reference population.*
[8] *Below -2 standard deviations from median weight for height of reference population.*
[9] *European Commission (2011), cited in ACF (2012)*
[10] *Grantham-McGregor et al. (2007)*
[11] *Horton (1999)*
[12] *FAO (2004)*
[13] *Black et al., (2008)*
[14] *http://www.scalingupnutrition.org/about-sun/*

2. UPDATING AND EXTENDING THE WORLD BANK ESTIMATES

In 2010 the World Bank (WB) published the first attempt to estimate the annual investments required to scale up 13 of the direct nutrition interventions identified in the 2008 Lancet Series. The estimates, totalling US$11.8 billion, focused on the gap between the cost of current levels and full coverage, and so are additional to existing nutrition expenditures. They also expanded the coverage from the 36 high burden countries included in the Lancet studies to 68 countries in total.[15] To date, this is the most authoritative study, although as the authors themselves point out, there remains considerable uncertainty in many of the costings, particularly with respect to delivery.[16] This is unsurprising of course, as the scale and ambition of the SUN Framework represent uncharted waters. Therefore, cost estimates will undoubtedly change over time as more is learned about best practices in terms of delivery, and large-scale procurement affects the cost of materials. Costs will also alter due to changes in supply and demand, either of the finished product or of specific ingredients, or because of the impact of food/commodity speculation. Finally, costs may also change due to fluctuations in fuel and transportation costs.

With these caveats in place, the World Bank direct nutrition cost estimates are given in Table 2.1.

These estimates were made in 2010, so costs will have changed and will continue to do so. There are two relevant types of target population group to consider here. First, for interventions that apply to the whole population,[18] or demographic sub-groups,[19] cost changes will reflect changes in population. Second, for interventions that focus on particular at-risk groups,[20] changes in the prevalence of the condition concerned will drive changes in costing.

To update and forecast these cost estimates into the future we need two sets of information: first, forecasts for population changes over the relevant period; and second, forecasts for the prevalence of moderate and severe acute malnutrition in the target populations (i.e. children of 6-23 months, and 6-59 months respectively).

For the forecasted (2015, 2020 and 2025) figures we have used the 2010 estimates as a baseline and modified these with respect to population[21] and

TABLE 2.1: WORLD BANK COST ESTIMATES OF SCALING UP DIRECT NUTRITION INTERVENTIONS [17]

	US$ Millions
Social and Behaviour Change and Communication (SBCC)	2,893.7
Vitamin A supplementation	129.7
Therapeutic zinc supplements	346.1
Multiple micronutrient powders	216.2
Deworming	80.4
Iron-folic acid supplements for pregnant women	85.2
Iron fortification of staples	598.9
Salt iodization	80.4
Complementary feeding (prevention and treatment of MAM*)	3,642.6
Therapeutic feeding (SAM**)	2,560.0
Capacity development for programme delivery	1,000.0
Monitoring and Evaluation (M&E) and research for programme delivery	200.0
TOTAL	11,833.2
Source: Horton *et al* (2010)	
* Moderate Acute Malnutrition ** Severe Acute Malnutrition	

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assumed prevalence. In the first case, we forecast population changes for the following interventions: Social and Behaviour Change and Communication (SBCC); vitamin A supplementation; therapeutic zinc supplements, multiple micronutrient powders; deworming; Iron-folic acid supplements for pregnant women; iron fortification of staples; and salt iodization. In each of these cases, the target population is not affected by the prevalence of undernutrition, but by general population changes. Consequently, cost estimates are driven by changes in these populations.

For the second case — i.e. MAM and SAM — future costs will be determined by prevalence rates among the target populations. We do not have detailed forecasts for MAM and SAM prevalence by country, and therefore need to use the proxies that are available. Before considering these, we should make clear some relevant assumptions.[22] As in Horton *et al*. (2010), we assume that the prevalence of SAM falls by half following the interventions described in Step 1. Also, following the World Bank study we take 'full coverage to mean 80 percent of the target population for this intervention. So, as was the case in Horton *et al.*, our forecasted costs are based on treating 40 percent of the estimated number of children with SAM. Clearly this assumption may prove to be overly optimistic, so the future costs associated with SAM presented below should be taken as the bottom of the potential range.

Which brings us back to the question of the future prevalence of MAM and SAM. When considering possible proxies, it is unfortunate that forecasts for wasting have not, to our knowledge, been made, most likely because of the large number of interacting explanatory factors that are at work. This remains an important area of future research, particularly as the World Health Assembly (WHA) recently endorsed a Comprehensive Implementation Plan for Maternal, Infant and Young Child Nutrition which includes six global nutrition targets, one of which is for wasting. Clearly, the prospects of achieving this target will be enhanced if the drivers of future patterns of wasting are better understood.

What we do have however, are estimates of future changes in stunting, which we take as a proxy for changes in general levels of undernutrition as defined earlier. It is important to stress that this should not be considered the same as changes in the prevalence of wasting, though the two are related. However, given the respective causes of wasting and stunting, the mapping is far from perfect.

Wasting depends on an acute and severe variance in food adequacy, whereas stunting depends on chronic food inadequacy. Despite this, it may be reasonable to assume that the variance stays broadly constant around a mean, which depends on overall food adequacy. So as stunting diminishes, the chance that a child who faces an acute issue[23] is pushed into MAM or SAM may also diminish. We appreciate that this is debatable, and that the relationship between the two requires further research.[24] [25]

Table 2.2 shows the percentage change in wasting and stunting from 1990-2000 and from 2000-2010. As we can see, there is a broad similarity between sub-regions, where an increase in wasting is generally associated with an increase in stunting. The major exceptions to this are in Southern and Northern Africa, where a decline in the prevalence of stunting occurred at the same time as an increase in wasting.

Thus, although the correlation will not be exact, and will vary by region, we assume that changes in the prevalence of stunting will be broadly reflective of wasting and underweight trends, and therefore that the populations identified by the World Bank as requiring complementary or therapeutic feeding interventions, will also move broadly in line with stunting trends. In the absence of better estimates, and given the relationship between levels of stunting and general levels of undernutrition, we think it reasonable to use stunting forecasts as the best available proxy, while recognising the limitations of this approach.

In the following tables and charts, we apply this approach to the World Bank costings using three sets of estimates. The first, de Onis *et al*. (2011),

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TABLE 2.2: PERCENTAGE CHANGE IN PREVALENCE OF WASTING VS. STUNTING 1990-2010					
		Wasting		Stunting	
		1990-2000	2000-2010	1990-2000	2000-2010
Africa	Eastern	28.57	30.56	20.47	20.87
	Middle	63.64	55.56	20.63	14.47
	Northern	36.36	60	-19.12	-5.45
	Southern	50	33.33	-4.76	0
	Western	12.2	15.22	23.02	23.87
Asia	Eastern	-46.55	-38.71	-53.5	-49.32
	South Central	-2.14	-4.38	-17.44	-24.09
	South Eastern	-10.71	-4	-26.04	-26.53
	Western	0	-8.33	-9.68	-8.93
Latin America	Caribbean	0	0	-33.33	-50
	Central America	-25	-33.33	-21.57	-27.5
	South America	-25	-16.67	-22.67	-29.31

Source: http://www.who.int/nutgrowthdb/estimates/en/index.html

estimates changes in stunting in the UN regions[26] from 2010 to 2015, and from 2015 to 2020. The second, Save the Children (2012), provides only a point estimate of stunting prevalence, where 2025 is compared with 2010, for each of the 36 high burden countries for stunting prevalence.[27] In each case, these are combined with estimates of population change for those interventions that are not driven by the prevalence of undernutrition, but instead move in line with populations.

Table 2.3 gives these estimates in nominal, US dollar terms, while Figures 2.1 and 2.2 translate this into percentage changes by region.

TABLE 2.3: ESTIMATED SUN COSTINGS 2010-2020 & 2010-2025 (US$ MILLIONS)* [28]					
	2010	2015	2020		2025
Eastern Africa	1,057.93	1,153.58	1,248.93		1,119.43
Central Africa	178.68	194.44	210.41		192.52
Northern Africa	432.10	449.83	465.99		451.01
Southern Africa	72.99	74.52	74.92		65.84
Western Africa	1,256.17	1,324.00	1,410.26		1,317.54
Central America	66.60	71.20	77.44		85.77
South America	75.76	78.63	81.83		84.07
South Central Asia	5,699.11	5,308.29	4,908.65		4,369.69
South East Asia	991.91	936.05	886.88		781.80
Western Asia	382.26	411.21	448.90		469.40
TOTAL	10,213.49	10,001.73	9,814.21		8,937.08
Source: Author's calculations based on de Onis *et al* . (2012) and Save the Children (2012)					
* These estimates are lower than in Horton *et al.* (2010), as the global figures given in that report included 32 smaller countries with a high prevalence of malnutrition, but not necessarily with very large totals in a global sense. Our estimates are for the 36 high burden countries only.					

Source: Author's calculations based on de Onis (2012) stunting & UN population forecasts

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FIGURE 2.1: ESTIMATED PERCENTAGE CHANGE IN SUN DIRECT INTERVENTION COSTS BY REGION (2010-2020)

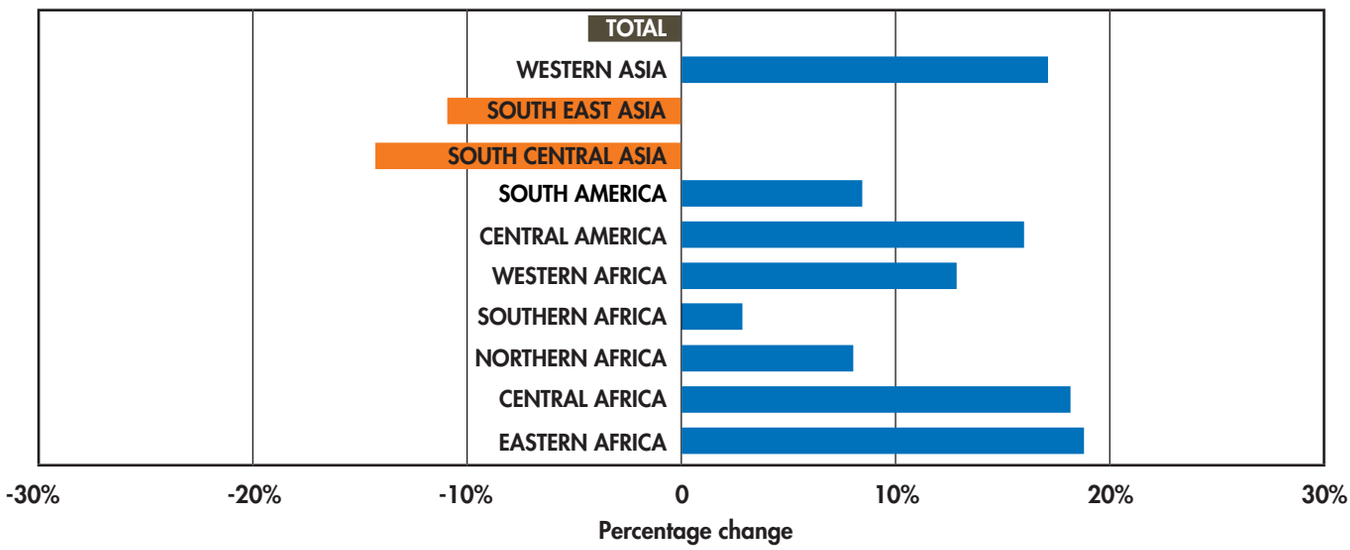
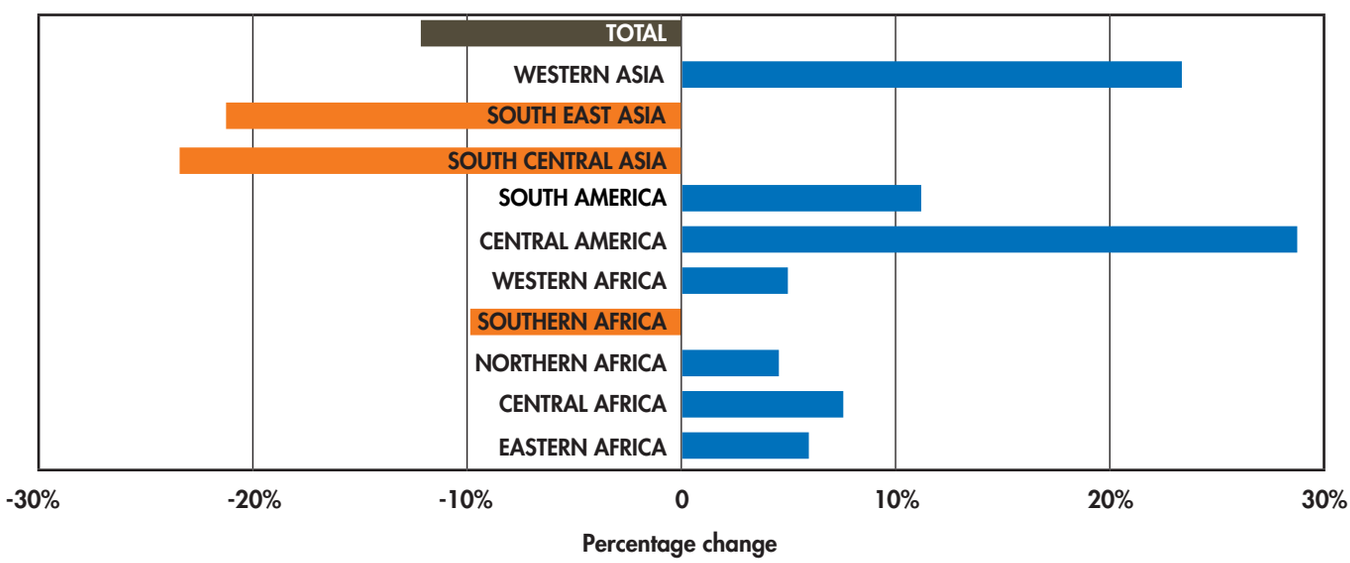


FIGURE 2.2: ESTIMATED PERCENTAGE CHANGE IN SUN DIRECT INTERVENTION COSTS BY REGION (2010-2025)



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The main points to emerge are as follows:

- First, both estimates show a total, global decline over each period.
- Second, the estimates based on the Save the Children (2012) study show a greater decline, largely because of a more optimistic view of global growth prospects.
- Third, and importantly, significant regional differences can be seen. Although Figure 2.1 shows a small reduction in total costs, this is an average of a situation where most regions experience a significant increase in prevalence and cost, while only two see a decline. Specifically, the forecasted global reduction is entirely driven by Southern and South-East Asia. Given the importance of growth in the underlying models, these changes are largely determined by differing expectations of growth rates, as well as predicted changes in population.

The Save the Children (2012) figures which underlie Figure 2.2 give a slightly more balanced picture, with Southern Africa as well as South-Central and South-Eastern Asia seeing a decline in total costs. As pointed out above, the differences in the two estimates are largely the result of more optimistic growth assumptions in the Save the Children study.[29]

Despite the uncertainty in these figures — and the caveats given above — there are some tentative conclusions that can be drawn: (i) in the absence of nutrition-specific interventions, the problem of undernutrition is likely to get worse in most parts of the developing world; (ii) as these estimates are based on stunting, and the prevalence of stunting may decline more quickly than other conditions such as wasting, these forecasts represent the most optimistic scenario; (iii) given the possibility that growth will not necessarily lead to improvements in nutrition, this cannot be taken for granted; and (iv) the ongoing economic downturn may mean that the growth forecasts used in the underlying models prove to be overly optimistic. Given the role played by South Central and South-East Asia in driving the global total, the growth performance in these regions is particularly important. On that front, it is noteworthy that India has experienced a rapid economic slowdown in 2012 — i.e. after these models were constructed.

What is clear, therefore, is that the problems that the direct nutrition interventions of the SUN framework are designed to solve will remain acute without concerted and coordinated action

[15] The additional 32 countries are those with rates of child stunting and/or underweight of more than 20 per cent.
[16] While acknowledging these uncertainties, Horton et al. (2010) attempted to account for different delivery costs in different regions through the use of regional multipliers. These were based upon the relative cost per health centre visit for the different regions from Mulligan et al. (2005).
[17] It should be noted that the in the original study, the SBCC category included three different interventions: promotion of breastfeeding, appropriate complementary feeding practices (excluding the provision of food), and good hygiene, particularly with regards to handwashing. Capacity building and M&E were also not included in the list of 13 interventions. These factors explain why there are 12 interventions listed in table 1, compared to 13 in Horton et al. (2010)
[18] The iron fortification of staple foods, for example.
[19] Deworming for all children between 12-59 months, for example.
[20] For example, treatment with complementary foods for populations with high prevalence of underweight children between 6-23 months.
[21] Using UN population forecasts.
[22] In order to be consistent, our assumptions replicate exactly those used in the cost estimates produced by Horton et al. (2010)
[23] Seasonal availability of food, or illness, for example.
[24] See Walker et al. (1996) for an early discussion of this issue.
[25] Using a large longitudinal dataset, Richards et al. (2012) explored the longitudinal relationship between stunting (height or length for age, LAZ) and wasting (weight for length/height, WLZ). Specifically, they determined if the history of wasting instances is related to stunting at 18-24 months of age. This study indicated that acute malnutrition in the form of wasting is associated with the process of stunting, and prevention of wasting could potentially increase attained stature in children. Children who vary considerably in their WLZ are presumably subject to food insecurity and seasonal infections. Thus, swings in WLZ may result in linear growth (height or length) faltering or stunting. Mean LAZ was lower among children who had greater variability in WLZ, suggesting that perturbations in the weight acquisition process can have a lasting impact on linear growth.
[26] The de Onis et al. (2011) forecasts for 2015 and 2020 are given at the sub-regional level described in table 2.2. Consequently country level changes in prevalence are inferred from regional percentage changes.
[27] The Save the Children (2012) forecasts for 2025 are given at the country level for the 36 high burden countries. The regional estimates presented in table 2.2 are therefore constructed from changes at the country level in each of the regions.
[28] These estimates are lower than in Horton et al. (2010), as the global figures given there included 32 smaller countries with high prevalence of undernutrition, but not necessarily very large totals in a global sense. Our estimates are for the 36 high burden countries only.
[29] Interestingly, as well as the importance of growth, the Save the Children study finds that inequality makes a big difference, where a one percent increase in income share of the bottom quintile of 1 significantly reduces the prevalence of stunting. The authors highlight the importance of this finding, as reducing levels of inequality is amenable to policy influence to a greater extent than global and national growth rates.

3. HOW COULD FUNDING BE SHARED AMONGST DIFFERENT SOURCES?

Although significant uncertainties remain about the exact level of funding that will be needed, it is clearly the case that full-scale implementation of the proven direct nutrition interventions will require a very large increase in annual resources, and this is unlikely to change in the foreseeable future. This raises the question of where this finance should come from.

Horton *et al.* (2010) suggest three main sources. First, developing country governments, many of which "already fund the distribution costs of deworming tablets, vitamin A supplements, and iron-folic acid supplements and may be willing to finance the program delivery costs for the proposed scale-up." Second, relatively wealthy households in developing countries, who are in a position to pay user fees and for complementary foodstuffs. The authors estimate that this source could contribute around US$1.5 billion of the total US$11.8 billion cost estimate.

As well as these developing country sources, a third suggestion made is that private corporations may be willing to absorb some of the costs of implementing the SUN programmes in areas such as fortification of food or transportation. The authors do not provide an estimate of how much this might be, but point out that additional costs could be passed onto consumers in developing countries anyway. Horton *et al.* also mention the growing role of private foundations, particularly the Bill and Melinda Gates Foundation (BMGF) and the Children's Investment Fund Foundation (CIFF). Detailed data on CIFF's commitments to nutrition are not publicly available, but a recent study put the contribution of the BMGF in 2009 at around US$96 million.[30] In the absence of better information, and assuming that CIFF and other private donors collectively match the BMGF expenditure, we suggest US$200 million per year as the amount that could be funded by private foundations.

The fourth potential source of funding is 'international aid', which the authors describe as the 'default source of funds' that would need to be sought to fill the funding gap for SUN. As discussed at length in the companion paper to this report, it is very difficult to measure donor spending on nutrition interventions with any degree of accuracy. Recent estimates have ranged from US$100-US$400 million per year.[31] Whatever the uncertainties, given the need is more than US$10 billion per year, a step change in funding is required.

That said, there is no need for this all to be new funding. Although aid for direct nutrition interventions remains small, funding in areas such as emergency food aid is much larger (US$2-US$3 billion per annum). This raises the question of how much of this related funding could be reallocated so that it contributed directly towards the 13 direct nutrition interventions advocated for by the SUN. At present this remains an under-researched but very important area.

As mentioned above, Horton *et al.* suggest that developing country governments may be prepared to meet in-country costs (i.e. labour plus delivery). This is based on standard practice in the sector whereby donors tend to meet the costs of materials while countries themselves cover labour and delivery costs.[32] We are not suggesting that this is the only way that this could be done, or that different countries may not be preparing implementation plans with a different allocation. However, this is one way of deciding on the important issue of the domestic-external split and also one that has historical precedent. Given that there is a good case for not taking these decisions on a case-by-case basis — so that countries face a 'level playing field' in terms of their expected contributions – our aim is to demonstrate that this choice has significant implications. We therefore use this method as our central case to illustrate the issues that arise.

We therefore have the following set of 'guidelines' for our thought experiment to assess the implications of allocating SUN annual funding needs:

Footnotes for Section 3 are on page 21

1. **Developing country contributions:**
- Governments to cover in-country labour and delivery costs (US$ unquantified)
- Relatively wealthy households to cover a share of material costs (~US$1.5 billion)

2. **External contributions:**
- Private foundations to contribute up to US$200 million.
- Donors to cover outstanding SUN material costs (US$ unquantified)

In the following tables, we explore the implications of allocating costs in this way. Specifically, we focus on the potential contributions of developing country governments and donors.

Three further points are important to stress:

1. The relative contribution of each of these parties will be driven by the cost ratio between materials and labour. As mentioned above, across the entire SUN package, this would mean an approximate 50-50 split between domestic and external funding sources. However, this ratio differs considerably for different interventions, ranging from 90:10 to 10:90 with respect to material and labour.
2. The composition of interventions differs significantly between countries and regions.
3. The composition of interventions reflects the additional cost of implementing SUN, and does not take into account existing expenditure. Any conclusions on the domestic/external cost split thus refer to these additional measures only.

Table 3.1 illustrates the point that the relative needs for different nutrition-specific interventions varies considerably by region. In sub-Saharan Africa and Southern Asia (both Central and South East), for example, the treatment of SAM accounts for 21.4% and 27.9% of total additional costs respectively. In Latin America and Europe, however, therapeutic treatment of this kind accounts for only 3.4% and 4% of total costs respectively. To place this in a national context, the three countries where treatment of SAM represents the largest proportion of the total direct nutrition intervention package are the Democratic Republic of Congo (42%), Burkina Faso (40%) and South Sudan (35%).[33]

Similar regional and country-level differences can be seen for other interventions, particularly treatment and prevention of MAM and Social and Behaviour Change and Communication (SBCC).

TABLE 3.1: REGIONAL TREATMENT BREAKDOWN (PERCENTAGE EXPENDITURE BY INTERVENTION)

	Sub-Saharan Africa	South Asia	East Asia	Latin America	Middle East/ North Africa	Europe	Unallocated
SBCC	29.34	21.94	32.27	58	49.88	57.92	0
Vitamin A supplementation	1.22	1.34	0.58	2.39	1.31	0	0
Therapeutic zinc supplements	3.5	2.63	3.86	6.97	5.98	6.92	0
Multiple micronutrient powders	2.88	0.49	3.48	9.36	7.42	11.46	0
Deworming	0.85	0.73	0.76	3.05	0.22	0	0
Iron-folic acid supplements for pregnant women	0.91	0.64	0.9	1.59	1.42	1.59	0
Iron fortification of staples	4.69	5.08	8.52	5.31	4.41	11.61	60
Salt iodization	0.44	0.63	0.63	0.33	0.47	1.03	40
Complementary feeding (prevention and treatment of MAM)	34.82	38.6	25.64	9.69	18.27	5.49	0
Therapeutic feeding (SAM)	21.36	27.92	23.36	3.32	10.62	3.98	0

Source: Horton *et al.* (2010)

Footnotes for Section 3 are on page 21

TABLE 3.2: MATERIALS VS. DELIVERY/LABOUR COSTS (%)		
	Delivery/ labour costs	Materials costs
SBCC	90	10
Vitamin A supplementation	96	4
Therapeutic zinc supplements	20	80
Multiple micronutrient powders	50	50
Deworming	33	66
Iron-folic acid supplements for pregnant women	90	10
Iron fortification of staples	5	95
Salt iodization	5	95
Complementary feeding (prevention and treatment of MAM)	12	88
Therapeutic feeding (SAM)	70	30
Capacity development for programme delivery*	na	na
M&E and research for programme delivery	na	na
Source: Horton et al. (2010)		
* Assume fully met by external resources		

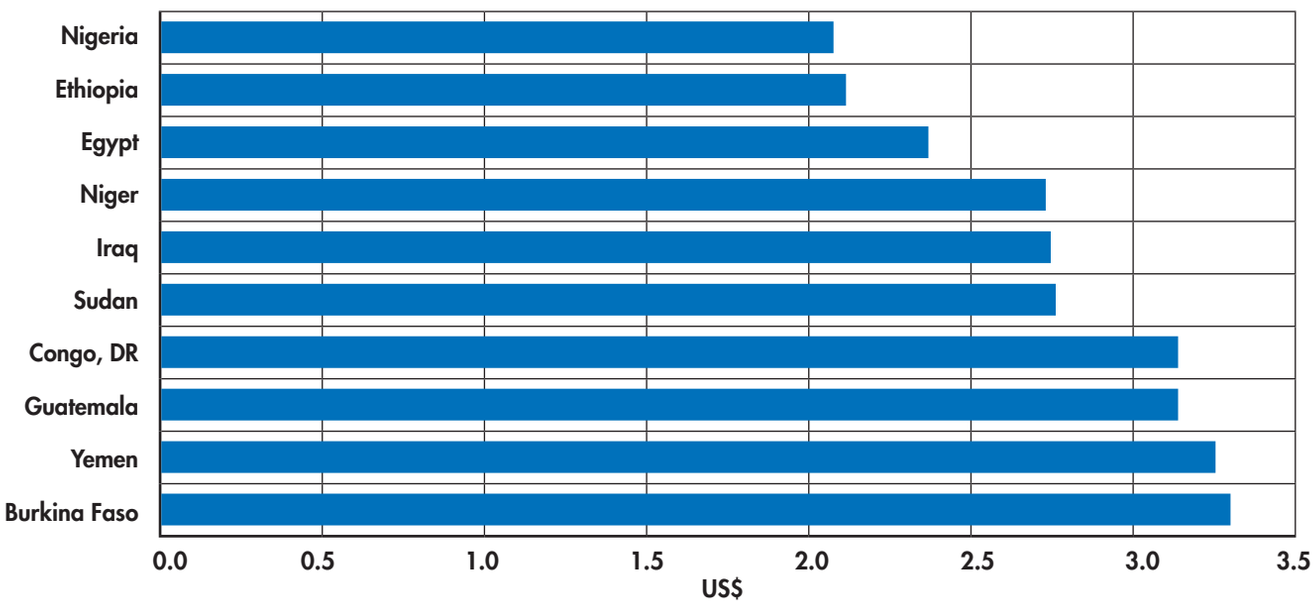
Table 3.2 demonstrates that, in terms of the potential impact on domestic versus external contributions, the regional and country-level differences described in the previous table matter. As we can see, labour and delivery costs accounted for 90% of SBCC type interventions, while for complementary feeding, these proportions are reversed with materials accounting for 88% of total costs. Interestingly, this is not the case for therapeutic feeding (i.e. SAM), where the community-based nature of the intervention means that 70% of total costs are for labour and delivery, with only 30% being due to the costs of materials.

As shown in Table 2.1, Horton *et al*. suggest the need for US$1 billion for capacity building and US$200 million for M&E relating to programme delivery. On balance we have decided to leave these unallocated, as the focus of the analysis is on those interventions where there is a clear split between labour and material costs. An argument can be made that the US$1 billion for capacity building should be included

TABLE 3.3: IMPLIED DOMESTIC-EXTERNAL SPLIT BY INTERVENTION (US$ MILLIONS)		
	Domestic	External
SBCC	2,670.42	296.71
Vitamin A supplementation	103.50	4.31
Therapeutic zinc supplementation	70.42	281.68
Multiple micronutrient powders	145.87	145.87
Deworming	26.94	54.70
Iron-folic acid supplements for pregnant women	84.69	9.41
Iron fortification of staples	21.48	408.18
Salt Iodization	3.18	60.50
Complementary feeding (prevention and treatment of MAM)	399.41	2,929.03
Therapeutic feeding (SAM)	1,748.02	749.15
TOTAL	5,273.94	4,939.55

Footnotes for Section 3 are on page 21

FIGURE 3.1: IMPLIED ANNUAL DOMESTIC CONTRIBUTION TO NUTRITION INTERVENTIONS PER CAPITA BY COUNTRY



under domestic costs, as this is a labour heavy intervention. However it seems too different from the other forms of intervention considered to be treated in this way.

Table 3.3 applies these ratios to the total SUN package where there is a clear material/labour division.

The following points are noteworthy.

- First, given the weight of labour relative to material costs and the size of the intervention in the total funding mix, the area with the largest implied domestic contributions is SBCC.
- Second, this is followed by treatment of SAM, with the remaining interventions implying relatively small domestic contributions.
- Third, for external funders, the largest cost area is MAM, reflecting the weight of material costs as well as the size of this intervention in the overall funding mix.

A more informative way of looking at this data is on a per capita basis. That is, rather than looking at percentages, what are the implied levels of domestic contribution on a per capita basis? Figure 3.1 applies this to national level, and gives the ten countries with the largest implied domestic contribution.

To give an idea of range, the country with the lowest implied domestic costs in per capita terms is Vietnam, where the corresponding figure is US$0.83, which compares with Burkina Faso, where the figure is around US$3.3 per head.

Table 3.4 and 3.5 show the results of some correlations between (per capita) domestic contributions[34] and (per capita) income. As we can see there is a negative correlation between per capita income and per capita domestic contribution, which suggests that poorer countries could be required to make larger contributions than wealthier ones, if the allocation mechanism tested here were to be used. Although

TABLE 3.4: PER CAPITA CONTRIBUTIONS (36 COUNTRIES)

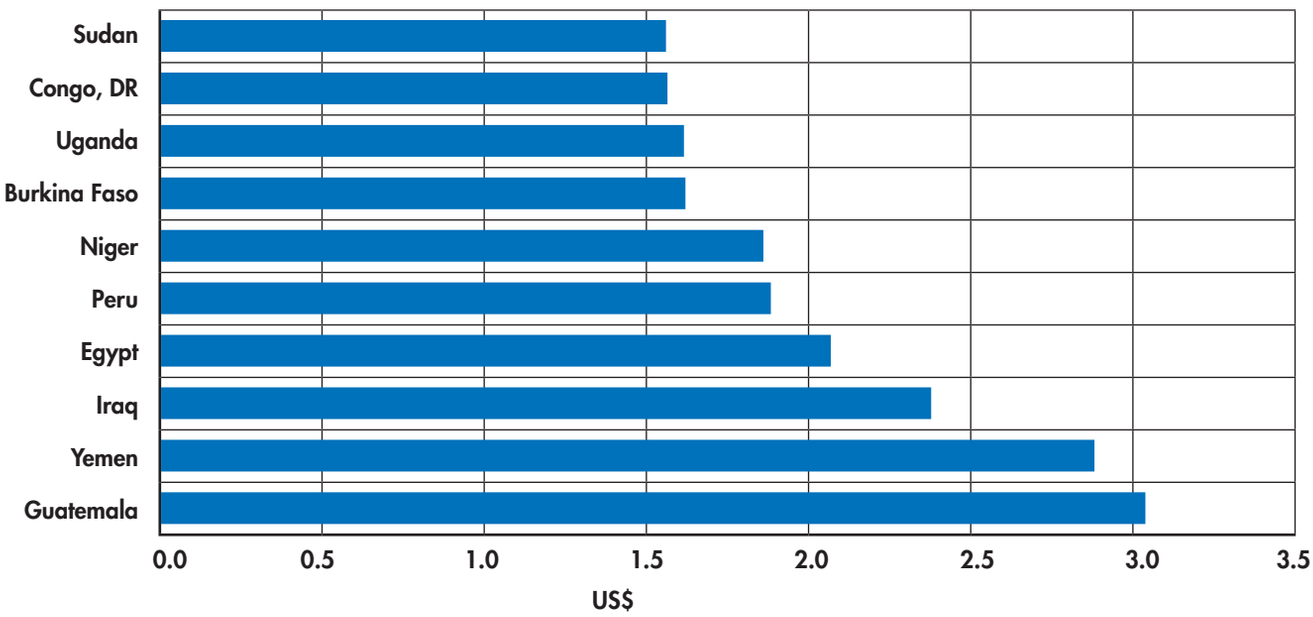
	Coefficients
GDP Constant (2000)	-0.31
GDP Purchasing Power Parity (PPP)	-0.3

TABLE 3.5: PER CAPITA CONTRIBUTIONS (68 COUNTRIES)

	Coefficients
GDP Constant (2000)	-0.31
GDP Purchasing Power Parity (PPP)	-0.29

Footnotes for Section 3 are on page 21

FIGURE 3.2: IMPLIED ANNUAL DOMESTIC CONTRIBUTION TO NUTRITION INTERVENTIONS PER CAPITA BY COUNTRY (EXCLUDING SAM)



these results are statistically significant at a 90% confidence level, the small sample size prevents us reaching a 95% confidence level.

To address this we repeated the exercise using 68 countries (i.e. the 36 high burden countries plus the 32 smaller countries with high domestic prevalence). As shown in table 3.5, the results are virtually identical and the larger sample size allows us to reach the 95% confidence level for statistical significance.

These results suggest that some careful thought is required about the implications of the mechanism to allocate costs domestically and externally. Failure to think these implications through could lead to the poorest developing countries being asked to fund the greatest proportions of the SUN package.

Intuitively this makes sense. The prevalence of SAM is likely to be higher in poorer countries, and the community-based management of acute malnutrition (i.e. CMAM) implies relatively high labour costs for these interventions. The danger, perhaps, is that support for (desirable) community based approaches is undermined as they could imply a disproportionately large domestic contribution. If SUN stakeholders considered this as a potential problem, there are a number of ways in which it could be resolved.

Perhaps the simplest way of dealing with this issue would be to ask external donors to fund total SAM costs, rather than just the material costs. The result would be to reduce the total domestic contribution to the SUN. However, this would disproportionately benefit those countries with the highest incidences of SAM. Figure 3.2 illustrates the impact this would have on implied per capita funding.

Another way of dealing with this issue could be to ensure full integration of SAM treatment into basic heath packages. It might be possible, for example, to piggy-back on current efforts towards health system strengthening to maximise use of resources, as suggested by Horton *et al.* (2010), rather than create more vertical approaches to deliver health services.

A final point is that some degree of country discretion would need to be retained. Not all countries with high levels of SAM are the poorest countries. The 'rebate' proposed above, where donors could fund community-based aspects of SAM treatment as well as costs of materials, could be applicable only for

countries which are below a certain level of per capita income.

To reiterate, these options are for illustrative purposes, and are designed to highlight the issues that these decisions raise. There are numerous other ways this potential problem could be addressed, ranging from adjustments across all SUN signatories to country-level modifications based on particular needs and capacities. Our purpose here is to highlight the potential problems, but also to show that they are not insurmountable.

[30] ACF (2012). It should be noted, however, that BMGF interventions listed for 2009 in the OECD CRS database, were all for indirect interventions.
[31] See the Lancet (2008), Médecins Sans Frontières (2009), and ACF (2012), for example.
[32] This was confirmed in personal correspondence with the lead author, Susan Horton.
[33] We thank Susan Horton (lead author of the 2010 study) and Christine MacDonald (researcher on the 2010 study) for making the country-level costing estimates available for this study.
[34] i.e. implied domestic contribution to scale up of nutrition as a proportion of national income.

4. ANALYSIS FOR PROPOSED WORLD BANK STEPS FOR SCALING UP NUTRITION

Horton *et al*. (op cit) propose a two-step process to implement SUN, where Step 1 focuses on capacity building to prepare for full implementation in Step 2. In this section we examine the implications of this proposal, which remains the most detailed approach to implementation that is currently on the table. This should not be taken to mean that we or the SUN Movement endorse this approach, however. Our aim is simply to explore its implications.

The key issue is that Step 1 entails a focus on interventions that rely heavily on domestic contributions (e.g. SBCC). As a result, a straightforward implementation of the 'rule of thumb' described above, would see domestic contributions as a share of total costs rise significantly. Rather than an approximate 50-50 split, developing countries would need to fund around two thirds of total costs in Step 1. It may be that this is not thought to be problematic. Indeed, there is an argument that asking SUN signatory countries to bear a higher share of start-up costs is important in terms of demonstrating commitment to the process, as well as encouraging country ownership. On the other hand, longer-term commitment may be facilitated more by a front-loading of external contributions at the beginning, so that momentum is built and evidence of progress can be used to strengthen national commitment for the longer-term.

We do not take a view on this, but aim to simply highlight this potential problem and also show that it could be addressed in a relatively simple way. The driver of the issue is the relative importance of SBCC interventions in Step 1, and the fact that these are the forms of intervention with the highest implied domestic contribution. As in the previous section, therefore, one straightforward solution would be to allocate some of these costs to external funders. For example, external funders could meet 50% of SBCC costs during Step 1. The result would be to reverse the phase 1 domestic-external cost split, so that external sources would meet two thirds of costs in Step 1. Of course, it may be that a different proportion would make more sense, or that the share of costs covered by external funders falls on a year-by-year basis throughout the first period.

Finally, the point raised in the previous section with respect to the costs of SAM also holds here. Adjustments in total external contribution may need to be weighted by country, perhaps with only the lowest income countries receiving the full 'rebate'.

Having explored the calibration of external funding needs for SUN implementation, the following two sections consider some options for meeting this funding gap.

5. OPTION 1: THE 'FAIR SHARES' MODEL

The most straightforward way of raising the additional external finance needed would be to increase funding from current Development Assistance Committee (DAC) donors in proportion to their GNI, assuming they deliver on their commitment to reach 0.7% GNI. Table 5.1 gives estimates for external funding for SUN direct interventions by bilateral and multilateral donors until 2017,[35] using the following assumptions.

First, we assume no savings in either implementation or procurement. In the first instance this is no doubt unrealistic, as the process of implementing SUN will see innovations in delivery methods at the country level, which are likely to reduce costs. However, in the absence of a firm basis for doing so, we do not include an estimate for these savings. Second, while it is possible that more efficient procurement practices resulting from the large-scale implementation of SUN could drive down prices, there is an equal risk that the huge increase in demand for material could drive up costs.

Second, we assume external funding of the costs of the Community-based treatment of SAM on an ongoing basis, but have not included external funding of 50% of SBCC interventions during Step 1. Were this to be included, it would raise the external

TABLE 5.1: 'FAIR SHARES' BILATERAL AND MULTILATERAL EXTERNAL FUNDING FOR SUN DIRECT INTERVENTION PACKAGE (US$ MILLIONS)

	2012	2013	2014	2015	2016	2017	2018	2019	2020
Australia	155.00	150.61	147.63	144.46	137.03	135.35	137.26	140.06	142.91
Austria	40.03	38.87	38.21	37.38	35.50	34.33	33.89	33.66	33.43
Belgium	48.55	46.62	45.40	44.12	41.77	40.46	39.66	39.11	38.57
Canada	176.36	170.52	167.00	163.07	154.74	149.97	149.06	149.09	149.10
Denmark	31.37	29.67	28.71	27.74	26.16	24.74	23.96	23.36	22.76
Finland	25.19	24.50	24.18	23.68	22.50	21.82	21.58	21.48	21.38
France	265.05	254.18	249.10	243.19	230.89	224.05	220.07	217.50	214.96
Germany	339.98	326.60	316.42	304.85	285.37	272.74	265.93	260.91	255.96
Greece	26.50	24.64	23.83	23.28	22.13	21.50	20.49	19.65	18.84
Ireland	20.49	19.75	19.39	19.03	18.16	17.70	17.33	17.07	16.82
Italy	202.00	190.63	182.94	175.84	164.71	157.52	151.81	147.22	142.76
Japan	584.52	552.76	536.05	519.25	488.24	469.10	459.16	452.23	445.39
Korea	113.71	113.37	115.13	116.52	114.63	115.23	117.45	120.46	123.55
Luxembourg	5.47	5.24	5.08	4.94	4.69	4.54	4.45	4.38	4.31
Netherlands	78.39	74.69	72.39	70.27	66.26	63.79	62.06	60.75	59.48
N. Zealand	17.64	17.13	16.67	16.23	15.27	14.95	15.10	15.35	15.61
Norway	49.02	46.67	44.84	43.14	40.52	38.92	38.60	38.53	38.45
Portugal	21.56	20.47	19.97	19.39	18.33	17.61	16.99	16.49	16.01
Spain	136.60	129.66	125.98	122.36	115.54	111.44	108.09	105.50	102.96
Sweden	53.69	52.46	52.30	51.85	49.60	48.47	48.88	49.61	50.34
Switzerland	60.68	57.24	54.93	52.55	48.89	46.48	45.78	45.37	44.96
UK	239.70	235.09	233.67	232.29	224.34	221.91	221.51	222.49	223.46
US	1,525.53	1,479.42	1,462.86	1,449.11	1,398.33	1,380.49	1,371.72	1,371.48	1,371.20
Multilaterals	1,722.45	1,658.63	1,626.72	1,594.82	1,520.90	1,483.94	1,466.68	1,458.88	1,451.31
TOTAL	5,939.48	5,719.42	5,609.39	5,499.37	5,244.49	5,117.05	5,057.52	5,030.63	5,004.53

Footnotes for Section 5 are on page 26

funding requirements by around 20%, but only for the duration of the first period. To reiterate, however, the formulation used here is for illustrative purposes only, and represents possible solutions to an issue that we think may be problematic, rather than a definitive recommendation of any kind.

Third, we have excluded the funds proposed for capacity building and M&E in Horton *et al*. (op cit) from this analysis. As described above, these costs relate to different forms of intervention, where the logic used in this paper is not applicable. Consequently, in our view, the issue of meeting these costs should be addressed separately.

Fourth, we assume that private households in developing countries meet US$1.5 billion of total cost as suggested in Horton *et al*. and that private foundations contribute the equivalent of US$200 million per year.

Finally, following historical norms, we assume that 71% of remaining external funding requirements are met by bilateral donors, with the remaining 29% coming from mainly multilateral sources. Bilateral donor contributions vary according to GDP growth rates of DAC donors. We do not disaggregate the multilateral contribution, as developing a reasonable and robust methodology to do this is outside the scope of this paper.

An important point to raise is that we have only included 'traditional' DAC donors in these calculations. This does not mean that we are in any way opposed to new donors, such as the larger emerging economies, participating in this process. Our 'fair shares' are based on forecasts for national income of DAC donors, which could be readily extended to include the economies in Brazil, Russia, Indian, China and South Africa (BRICS), for example.

5.1 How could donor countries raise the necessary funds?

Clearly, it is not for us to stipulate how donor countries should raise this finance, so here we simply suggest a few options that might be worth considering. These can be organised into two main groups.

First, rather than raising additional finance, one option would be to reallocate existing funds. As described earlier in this paper, there are very strong arguments for increasing the priority given to direct nutrition interventions and indirect nutrition interventions within total ODA budgets. Some countries (e.g. Ireland) have already done this, and a similar move by other DAC and non-DAC donors would be more than sufficient to meet the financing needs estimated here.

The second set of options would see total ODA increased to meet these needs. While this may be politically difficult in times of fiscal austerity, the sums involved are not huge relative to total bilateral ODA budgets.

Despite this, it should be recognised that new sources of finance would most likely be needed to raise these funds and this is fraught with political difficulty in the current climate.

When considering possible innovative sources of additional bilateral finance for nutrition, we can organise potential mechanisms into one of three categories: guarantees; market-based mechanisms, and what might be termed 'revenue reclaim mechanisms'. The first of these — guarantees — seek to leverage private investment by providing surety over future revenue streams, so giving the private sector confidence to invest. Market-based mechanisms, in contrast, generate additional public sector revenues that can be used to boost ODA. Finally, 'revenue reclaim mechanisms' involve actions by bilateral donors that increase the revenues available to developing country governments.

As a contribution to this process, Box 5.1 suggests some 'innovative' mechanisms within each of these categories. If it proves impossible for countries to reallocate existing funds, or to raise additional finance, an alternative would be to augment bilateral contributions with new international sources of revenue. Options in this regard are briefly discussed in the next section.

BOX 5.1: POSSIBLE 'INNOVATIVE' SOURCES OF ADDITIONAL ODA FOR DONORS

GUARANTEES: We can think about a number of different types of guarantee. First, developed country governments could guarantee a future market for products, and thereby give private companies confidence to invest in R&D and product development. A good example is the Advance Market Commitment (AMC) process, where governments guarantee the price of vaccines developed by pharmaceutical companies. This template could be a useful mechanism for the development of fortified foods, and ensuring the availability — and affordability — of materials for complementary and therapeutic feeding at scale.

A second form of guarantee is innovative bond structures of various forms. The best known of these is the IFFIm (International Finance Facility for Immunization). With this mechanism, donors commit to meet future debt service costs, allowing finance to be raised on global capital markets to 'front-load' investment. Such mechanisms are ideal for investments where preventative action will yield high returns, potentially reducing the scale of future funding requirements. The Copenhagen Consensus documents describe the SUN bundle of direct nutrition interventions very favourably, suggesting substantial potential in this area. Two caveats are needed: first, finance is not really additional, as donors commit to honour debt service commitments over the life-time of the bond; second, appetite for such bonds in international capital markets — particularly given current and anticipated sovereign borrowing, as well as ongoing turmoil in the Eurozone — is likely to be limited at the current time.

A new structure that has been proposed is the 'development impact bond', based upon the 'social impact bond' (SIB) structure.[36] With an SIB, investors — generally private investors — buy bonds issued by a public entity. The funds raised are spent on services, often delivered by non-profit organisations. If an improvement in the specified outcomes occurs, the government pays the investors a more or less commercial return. Although still in the conceptual phase, Development Impact Bonds (DIBs) would work similarly, but with returns to investors financed by donors or by developing country governments. For proponents, the main appeal of DIBs is innovation in service delivery rather than new finance: a variety of actors try different approaches, but the public sector only pays for the ones that work. In the current context, there is a potential role here with regard to the delivery of SUN nutrition-specific interventions, which will inevitably involve much trial and error. However, the limitations are that interventions that are most likely to work will be the most attractive to investors, but these are the interventions where the least 'innovation' is required. Despite this, there does seem scope to develop these types of interventions within the SUN implementation process.

MARKET-BASED MECHANISMS (MBMs): MBMs entail the implementation of levies and taxes on existing markets, or the application of these to new markets. An example of the former is the 'solidarity air ticket levy', where a small fee is charged for every airline ticket in participating countries, with the funds allocated to UNITAID, GAVI and the Global Fund. The airline industry is far from being new or 'innovative', but the application of a tax certainly is, as would be the case with other sectoral levies of this kind.

A more obvious innovative structure is the levy applied to the European Trading System (ETS) for CO2 emissions, with some of the proceeds of national permit auctions being used to fund mitigation and adaptation to climate change in developing countries. Using this mechanism, for example, Germany raised US€340million between

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2008 and 2010, which is expected to rise to €3.2 billion by 2015. France has committed to a similar approach from 2013.

One interesting option would be to develop the concept of the 'fat taxes', which was first introduced in Denmark in 2011 to combat obesity and raise revenues. A fat tax introduced in the UK at the Danish rate would raise around US$3.4 billion, less than a tenth of which would fully fund the UK's fair shares contribution at its highest level. If implemented in the US, more than US$10 billion could be raised — or enough to fund the majority of the nutrition-specific intervention package. Another option is national level financial transaction taxes (FTTs). The UK's current stamp duty raises more than £3 billion per year, for example, and the recently introduced bank levy should raise £2.6 billion. While FTTs could be applied to any financial instrument, a tax on currencies transactions is another option. For example in the UK, such a tax could raise more than £1 billion.
The main MBM issues are political feasibility and 'hypothecation'. In the first case, can politicians sell the idea of a new tax? In the second, can we be sure that the proceeds would be used to fund nutrition objectives? An interesting point is that it might be easier to win the first battle, if the new taxes were marketed as serving precisely this purpose.

REVENUE RECLAIM MECHANISMS (RRMs):
From a bilateral perspective, the most feasible RRMs relate to debt relief. Specifically, there are a number of examples that entail bilateral debt relief on the condition that freed up resources are used to fund particular activities. Examples are: Debt2Health where creditors cancel bilateral debt with the funds reinvested. The Global Fund receives the funds and reallocates them; Debt-for-Nature, which applies the same model to environmental projects; and C2D, where freed up funds are reinvested in projects dedicated to poverty reduction. While these types of Innovative Financing Mechanisms (IFM) are good at ensuring funds are spent in particular ways they may have limited use in the long-term. First, by definition they reflect the priorities of donors (i.e. creditors) rather than developing countries. Second, the level of funds is inherently limited to the total level of outstanding bilateral debt. While useful, therefore, in the context of this paper, they are best suited to specific, time-limited projects, and so could be used to fund specific direct nutrition interventions over a set period of time.

As we shall see in Box 6.1, there are other — more international — forms of RRM that offer significantly more potential in the long term.

[35] The driver of changes in national allocations is relative to changes in GDP between donor countries. The source used is the IMF WEO database, which provides GDP forecasts to 2017. We extrapolate for 2017-2020 based on national average growth rates over the preceding period.
[36] CGD /Social Finance (2012) Development Impact Bonds, Working Groups Meeting 1, 29 May 2012 http://www.cgdev.org/doc/Working%20Groups/Development%20Impact%20Bonds%20Briefing%20Note.pdf

6. OPTION 2: A BLENDED, 'INNOVATIVE FINANCE' MODEL

Currently, private investment in the nutrition space is largely restricted to major foundations, such as BMGF and CIFF. There is also scope to increase the role of impact investors, although this is largely priced into the previous estimates (i.e. impact investors[37] are likely to be interested in investing in the supply of fortified and complementary foods, as well as micronutrients). The demand-side of this equation — i.e. the purchasing of these foodstuffs — has been addressed in the previous sections, so an increase in the presence of impact investors would not be expected to really add to the total stock of available finance. Given that there are not significant financial returns to be made from the SUN process in most instances, we must look to new and innovative public sources of finance, which are more international than national in form. Although both are required, we stress international for two reasons.

First, in the previous section, we considered in detail the option of meeting additional external funding needs from national sources. If this proves impossible, and the scope for increasing private sector contributions is inherently limited, there is no choice but to look to non-national sources. The second reason is more positive, in fact it may actually be desirable to seek 'supra-national' sources of funding: global health can be viewed as a global public good,[38] and nutrition is a key foundation of this. In principle, there is a strong case for developing supra-national (i.e. global) sources of revenue to fund global public goods (GPGs).[39]

Of course, global nutrition is far from being the only global public good, and a similar case can be made for developing supra-national funding sources in other areas. However, this does not detract from the case made here.

The most straightforward approach to raising global finance for these purposes would be to use existing mechanisms such as GAVI or the Global Fund, with some of their financing being directed towards SUN implementation. Unless additional financing is raised for these institutions, however, this would mean less money for existing uses. We prefer to adopt a positive sum, rather than a zero sum, approach to this issue, and thereby consider how new finance could be raised, rather than existing finance reallocated. This does not mean that these institutions should not be used to distribute funds, not least as there is a good case to avoid replicating vertical delivery structures, but where these funds come from is a separate issue.

As in the previous section, the aim here is to explore options, rather than make hard recommendations. We use the same three categories to explore options for new, innovative forms of finance at the global level. Box 6.1 gives an overview of some of these, and briefly considers the relative merits of each.

While dealing with this issue may be a long-term goal, it may also have the largest impact, potentially unlocking very large amounts of developing countries' own resources.

BOX 6.1: POSSIBLE SUPRA-NATIONAL INNOVATIVE SOURCES OF ADDITIONAL FINANCE

GUARANTEES: As with bilateral mechanisms, these mechanisms work by guaranteeing a minimum level of future income, thereby giving private operators the confidence to act now. Similar mechanisms are already in operation. For example, the World Bank is already involved in Advance Market Commitments (AMC), as it holds donor funds and absorbs market risk. There is no reason why other multilateral institutions should not increase their involvement in AMC type processes which focus on nutrition. Indeed, from a coordination perspective, it might make sense for them to do this, with one institution being better able to perform this role than a

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patchwork of bilateral donors. A similar argument can be made with innovative bond structures. For example, the World Bank has been the largest issuer of 'green bonds', where finance is raised to fund environmental projects in developing countries. The case for bilateral donors to issue bonds to front-load investment in nutrition interventions applies equally well to multilateral institutions. The question, however, is who ultimately picks up the tab. If the World Bank issues 'global nutrition bonds' to fund nutrition interventions, does it service these bonds with its own resources, and — if so — where do these revenues come from? With green bonds, investment in renewable energy infrastructure will yield a return that can be used to service the bond. With nutrition interventions, however, this will not be the case, so payments must ultimately come from public resources, either multilateral or bilateral. The case for front-loading investment holds, however, and whether to have multilateral or bilateral entities as the primary borrower depends on which can borrow most cheaply and efficiently. The caveats on market appetite still apply.

GLOBAL MARKET-BASED MECHANISMS (GMBMs): While the nature of MBMs is the same whether applied nationally or supra-nationally, there are a number of major differences. Most pertinently, while national taxes are implemented and collected by sovereign governments within their own national jurisdictions, there is no such global institution. Without a global government, major issues of legitimacy arise with respect to tax-raising powers, and there are also serious logistical constraints to deal with. Despite these difficulties, however, there are a number of examples of GMBMs that have the potential to create global sources to fund GPGs. For example, a levy on emissions from the global shipping sector has been proposed as a new and innovative source of funds. Also, the allocation of Assigned Amount Units (AAUs) to countries as part of any post-Kyoto mechanism, where AAUs correspond to permitted national emissions, has been proposed as a source of funds. What distinguishes these proposals from the previous MBMs is their 'supra-national' character. International shipping, for example, does not fall under the jurisdiction of particular countries. The AAU proposal is similarly designed to bypass national exchequers. This fits well with the need to finance GPGs. A similar argument has been made with respect to a tax on global currency transactions. In 2010, the *Task Force on International Financial Transactions and Development*, made this link, arguing that a small levy on currency transactions would represent a tiny levy on access to the 'global commons' and provide a source of funding for GPGs. A number of other MBMs could fall into either camp: bilateral or supra-national. Carbon taxes, for example could — in principle — be applied at the global or national level. Another mixed alternative is represented by broader forms of FTT (the most comprehensive is that of Schulmeister, 2009). For the purposes of this paper, an interesting option would be a tax on speculation in food commodity markets. The last ten years have seen huge growth in volumes, which some link to high and volatile food prices. As well as raising significant revenue, a tax of this form could potentially have positive effects on price volatility.

As with national MBMs, the obstacles to global taxes are political feasibility and hypothecation. The former is an even larger obstacle here, however, as new global mechanisms are likely to require agreement and coordination between many countries, as well as an institutional infrastructure. In this regard, it would make sense to rely on existing institutions as much as possible, and to start in areas where agreement can be most easily reached. For hypothecation, the risk is that new sources of revenue are diverted elsewhere, which can only be prevented by all actors making a concerted effort to ensure that this would not occur.

REVENUE RECLAIM MECHANISMS (RRMs):
Although the bilateral mechanisms described earlier may offer limited potential, a far more important long-term source is the reduction of illicit flows of capital from developing countries by increasing international cooperation. The OECD estimates that the volume of funds leaving Africa destined for tax havens is several times higher than the volume of aid arriving. The think tank Global Financial Integrity has estimated the total volume of illicit outflows from developing countries at US$900 billion in 2009. UNDP estimated the volume of illicit flows from Least Developed Countries to be US$20 billion in 2008. Meanwhile, NGO Tax Justice Network has estimated that the total stock of monetary assets held in tax havens in 2010 was somewhere between US$21 trillion and US$32 trillion. The nature of the issue makes precise estimation difficult, but clearly volumes are significant, and even a relatively small proportion would greatly increase the financing available to developing countries. However, as well as finance, this mechanism would engender country-ownership, policy autonomy and positive impacts on state-citizen relations making it a highly appealing route to explore. Many policy measures have been proposed to curb these outflows of funds. Developing countries can enhance their own taxation capacity, which can be supported by developed countries, through ODA for example, and also through spill-over analyses of the impact of changes in their own tax rules on developing countries. To be effective, international co-operation measures need transparency, for example via better information exchange between jurisdictions, or through MNC transparency. These measures were endorsed at the G20 2011 Summit by a consortium of international organisations including the IMF, World Bank, OECD and UN, and the EU recognised the importance of this issue in its 2010 Communication on Tax and Development. Tangible progress includes increased use of a multilateral tax information exchange agreement (the Multilateral Convention on Administrative Assistance in Tax Matters), a similar agreement in Africa, endorsement of automatic tax information exchange by the OECD, and a commitment to country by country corporate reporting of basic accounting information in Norway, with a similar measure currently under consideration in the EU. Finally, DG TAXUD is currently working on a strategy on tax havens and unfair tax competition.

[37] The Global Impact Investing Network describe their approach as follows: "Impact investments are investments made into companies, organizations, and funds with the intention to generate measurable social and environmental impact alongside a financial return." http://www.thegiin.org/cgi-bin/iowa/resources/about/index.html
[38] For an excellent account of the global public good concept see Kaul et al. (1999)
[39] For a discussion of this issue, see the Committee of Experts to the Task Force on International Financial Transactions and Development (2010)

7. CONCLUDING REMARKS AND POLICY RECOMMENDATIONS

The aims of this report have been to:

1. Produce an estimate of the trajectory of global funding needs over the next 10 to 15 years for the SUN direct nutrition interventions, based on factors such as projected growth rates, and changes in relevant populations.
2. Highlight the wide regional and country level differences within this total global figure.
3. Argue the case for a systematic approach to important SUN funding issues such as the appropriate domestic-external ratio, so that signatory countries that are drawing up national implementation plans face a 'level playing field'.
4. Highlight the potentially negative development implications of some plausible options so that SUN stakeholders are able to take these factors into account.
5. Suggest some options that could be used to avoid certain negative outcomes — such as poorer countries facing a higher domestic contribution, for example.
6. Explore two different options for raising the necessary, additional external finance:
   a) The **'fair shares'** model assumes additional finance is raised through ODA, and gives bilateral and multilateral funding needs from 2012 to 2020. Some options are considered for where bilateral donors could raise the finance this model would require. While this is restricted to 'traditional' DAC donors in the current study, this can be readily extended to incorporate new donors, such as the larger emerging economies.
   b) The mixed, **'innovative'** model, where additional ODA is augmented from new international (or more accurately, 'supra-national' sources). Here the concept of global public goods (GPGs) is introduced as a positive justification for developing new funding sources, which are well suited to funding SUN-type interventions according to a number of specified criteria.

Whichever funding options are chosen, we believe that there is a need for consistency and sustainability: consistency, in that all countries should be treated fairly within a transparent framework; sustainability, in that the funding needed to support the SUN process should be there for as many years as it takes. Decisions with major financial implications, such as the external-domestic ratio, should ideally be agreed by all parties and implemented across the board, rather than taken on a country-by-country basis. If these questions have major developmental implications — and they do — then they should be answered in a systematic, transparent way that takes full account of all relevant factors.

One way of thinking about innovative sources of finance — and this is the way the question tends to be addressed — is that they can fill a funding gap that should ideally be met from 'traditional' sources. While there is a strong argument to increase donor funding sharply in this vital area, there is also a positive case that can be made for innovative sources. In this study we have raised the issue of funding global public goods through new supranational sources of finance, which are not only sufficient to the task, but are predictable and have the potential to begin to fill the funding gap for the global public goods upon which we all depend.

More generally with innovative finance for nutrition, there is a need for alignment with on-going initiatives led by the Task Force for Innovative Funding in food security, agriculture and nutrition, as well as broader work in this field, particularly the work related to funding global public goods.

The SUN Lead Group and Secretariat should make a call at the UNGA for all SUN countries to have costed plans in place by end of 2012. A transparent reporting and tracking mechanism for expenditure on nutrition is also an important part of the process for donors and national governments to ensure that funds are used in the most effective way. Without a common approach to reporting and full transparency

in this process, best practices will not be identified, understood and replicated.

In this report, we have only begun to scratch the surface of considerations to successfully deliver nutrition interventions at scale. What is clear is that there needs to be a step change in funding for interventions to reduce undernutrition. Innovative finance models exist which can be used by both donors and national governments to help to inject the much needed cash to implement the SUN Framework in its entirety. Vital areas for further research include identifying which indirect interventions and why and how they interact with the direct interventions considered in this report, as well as forecasting for changes in the prevalence of wasting over the coming years.

While the funding to scale up nutrition may appear large in nominal terms, the SUN Framework is a vital investment with very high development returns which addresses all forms of undernutrition. Put simply, full and successful implementation of the framework will mean that unnecessary deaths and mental and physical disability due to undernutrition will be avoided.

Furthermore, donors and governments should recognise that the developmental gains of tackling undernutrition will be undermined or reversed by a failure to prepare and respond adequately to humanitarian crises. Investments in nutrition should include investments in preparedness in order to build resilience to future humanitarian emergencies.

Our recommendations are as follows:

1. Given the chronic underinvestment in proven, cost-effective, nutrition-specific interventions, donors and national governments must scale up investments in nutrition in both development and humanitarian contexts.
2. Donors should explore and trial innovative financing to provide long-term, sustainable and predictable funding for the full nutrition package which is aligned with complementary initiatives in health, food security and agriculture.
3. The SUN signatory countries must demonstrate their commitment to scaling up nutrition by costing national nutrition plans by the end of 2012.
4. The SUN Leadership, donors and SUN signatory countries should work together to develop a systematic, equitable and transparent mechanism for the sharing of costs between domestic and external sources so that countries receive adequate assistance in proportion to their needs.
5. The OECD needs to improve monitoring and evaluation of the nutrition financing activities of donors to allow ‘best practices’ to be identified, understood and replicated.
6. The OECD should align domestic and external reporting procedures in order to improve accountability for nutrition financing.
7. Donors, academia and civil society should complement the extensive research on direct interventions with a similar process for indirect interventions that will address the underlying drivers of undernutrition in order to avoid tackling the issue with a fragmented approach.

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