



A window of opportunity: Australian aid and child undernutrition

Office of Development Effectiveness
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Foreword

Ensuring that children have adequate nutrition is a sound investment in both the social and economic development of countries. Without the right start in life, people cannot fully utilise education and employment opportunities to escape poverty. This evaluation is an important contribution to DFAT's increasing understanding of and focus on child undernutrition.

The evaluation uses the latest thinking on nutrition to interrogate the quality of Australia's nutrition investments. The investments reviewed for this evaluation generally follow the best practice principles of using interventions most likely to be effective, supporting country ownership and working across sectors. Indeed, the Pakistan and Timor-Leste case studies highlight that Australia has been a champion of nutrition policy and coordination in these contexts.

The report clearly identifies what needs to be done to ensure nutrition investments provide value for money. Better monitoring and evaluation of nutrition investments is critical. The evaluation rightly points out that investments should be better targeted. The level of investments should match the severity of undernutrition in partner countries as well as the vulnerabilities of different social and age groups. An increased awareness and knowledge of nutrition among DFAT staff and counterparts is needed so that investments are more strategic and deliver better returns.

Nutrition is a complex topic but getting it right, especially before the age of 2 years, can make an enormous difference to people's lives. With half of the world's people currently suffering from some form of nutrition burden, I commend ODE for this thought provoking report.



Jim Adams
Chair, Independent Evaluation Committee

Office of Development Effectiveness

The Office of Development Effectiveness (ODE) is an independent branch within the Australian Government Department of Foreign Affairs and Trade (DFAT). ODE monitors the Australian aid program's performance, evaluates its impact, and contributes to international evidence and debate about aid and development effectiveness. ODE's work is overseen by the Independent Evaluation Committee (IEC), an advisory body that provides independent expert advice on ODE's evaluation strategy, work plan, analysis and reports.

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Contents

Foreword	ii
Contents	iii
Acknowledgments	v
Abbreviations	vi
Executive summary	1
Management response	6
1 Undernutrition in childhood	9
1.1 Improving nutrition for children: a development priority	9
1.2 Types and consequences of undernutrition	9
1.3 A window of opportunity: the first 1000 days of life	11
1.4 The prevalence of child undernutrition	11
1.5 Causes of undernutrition	13
1.6 Interventions that address child undernutrition	14
1.7 Global efforts to improve child nutrition	16
2 About the evaluation	17
2.1 Purpose of the evaluation	17
2.2 Data sources and methods	17
2.3 Conceptual framework	20
3 Australia's nutrition investments	21
3.1 Tracking Australia's investments	21
3.2 Quantifying Australia's investments	21
3.3 Geographic focus of investments	23
3.4 Focus on nutrition-sensitive investments	25
3.5 Investments in nutrition by sector	25
3.6 Limited support for nutrition-governance initiatives	27
3.7 Types of activities that deliver nutrition interventions	28
3.8 UN agencies are the main implementing partners	29
4 Alignment of investments with good practice	32
4.1 Interventions used are effective according to evidence	32
4.2 Initiatives make appropriate use of a multi-sectoral approach	33

4.3	Investments support country ownership and sustainability	35
4.4	Initiatives make appropriate use of a twin-track approach	37
4.5	Targeting should be improved	38
5	Opportunities to improve the effectiveness of investments	40
5.1	Better monitor and evaluate investments	40
5.2	Build nutrition capacity of DFAT and counterpart staff	42
5.3	Develop nutrition strategies	43
Appendix 1	Glossary	45
Appendix 2	Initiatives examined by the evaluation	46
Appendix 3	Evidence-based interventions	48
References		52

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Cover: Solomon Islands women are receiving better nutrition information to promote healthier diets for them and their families with the support of DFAT-funded volunteer, Erica Reeve (Australian Volunteers International).

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The evaluation was undertaken from November 2013 to November 2014. The data gathering took place over the period of the integration of the Australian Agency for International Development (AusAID) with the Department of Foreign Affairs and Trade (DFAT). Any references to AusAID in the report relate to the former agency; however, to the extent possible, the report has been modified to reflect the new, integrated DFAT.

We would like to acknowledge the assistance that we received from the DFAT posts in Islamabad and Dili. We would also like to thank the key informants who agreed to be interviewed as part of these studies. As stated in the case study protocol, these informants will remain anonymous.

Abbreviations

\$	Australian dollars
AusAID	Australian Agency for International Development
BESIK	Rural Water and Sanitation Program (Timor-Leste)
DAC	Development Assistance Committee (OECD)
DFAT	Department of Foreign Affairs and Trade
FAO	Food and Agriculture Organization of the United Nations
KIP	key informant, Pakistan
KITL	key informant, Timor-Leste
NGO	non-government organisation
ODA	overseas development assistance
OECD	Organisation for Economic Co-operation and Development
PINS	Pakistan Integrated Nutrition Strategy
QAE	quality at entry
QAI	quality at implementation
SAFANSI	South Asia Food and Nutrition Security Initiative
SoL	Seeds of Life (Timor-Leste)
SUN	Scaling Up Nutrition
UN	United Nations
UNICEF	United Nations Children's Fund
US\$	United States dollars
WASH	water, sanitation and hygiene
WFP	World Food Programme
WHO	World Health Organization

Executive summary

Undernutrition in young children is a key development challenge. In low- and middle-income countries, undernutrition is associated with between one third and half of child deaths. The Australian Government's 2014 development policy identifies early childhood nutrition as 'a critical driver of better development outcomes'. International evidence shows that investments to reduce child undernutrition are cost-effective and protect other investments in health, education and private sector development.

Providing the right nutritional support to children aged less than 5 years, and particularly those aged less than 2 years, is pivotal for a healthy life. This includes ensuring adequate protein and energy for growth, and micronutrients to prevent conditions such as anaemia. Children can suffer acute and/or chronic undernutrition. Wasting (thinness), often seen during famines, reflects acute undernutrition and significantly increases a child's risk of death. Stunting (shortness) reflects chronic undernutrition and is associated with reduced capacity to resist disease, suboptimal cognitive development and poor school performance. Childhood stunting is associated with lower earnings and poor health in adulthood.

The first 1000 days of a child's life between conception and the age of 2 years is considered to be a 'window of opportunity', as stunting prior to the age of 2 years is largely irreversible. Maternal undernutrition, leading to poor growth in utero, may initiate stunting.

In 2013, a quarter of children aged less than 5 years worldwide were stunted. Half of these children were in Asia and over one third in Africa. Undernutrition is also a significant development problem in priority regions for Australian aid. In Pacific countries with small populations, the number of stunted children is low compared to other regions, but the proportion of stunted children is amongst the highest in the world and there has been little improvement since the 1990s. In Southeast Asia, the proportion of children stunted is also high, especially in Cambodia, Laos and Timor-Leste.

Undernutrition is caused by factors operating at the level of the individual (immediate causes), household (underlying causes) and society (basic causes). Nutrition-specific interventions, such as micronutrient supplementation and emergency food assistance, address the immediate causes of undernutrition, such as inadequate food intake and disease. Nutrition-sensitive interventions, such as crop breeding, health professional training, girls' education and sanitation behaviour change, address the underlying causes of undernutrition, such as food insecurity, inadequate care, low status of women and intestinal worms. Nutrition-governance interventions, such as laws, policies and the promotion of economic growth, operate at the societal level to address the basic causes of undernutrition, such as weak governance and poverty.

The evaluation aimed to answer three questions:

1. How does Australian aid policy and programming address child undernutrition?
2. To what extent does this approach align with the principles of good practice?
3. What opportunities exist to improve how Australian aid addresses child undernutrition?

Four analyses were used for the evaluation: (1) a review of the international literature on undernutrition prevalence, the effectiveness of interventions and donor policies; (2) a financial analysis of Australia's nutrition expenditure; (3) a document review to assess a sample of initiatives against the principles of best practice; and (4) a series of case studies to examine four initiatives in Pakistan and Timor-Leste in greater depth.

How the Australian aid program addresses child undernutrition

In 2013, Australia and other donors pledged to increase their nutrition investment, using combined 2010 and 2012 aid disbursements as the baseline. Between 2010 and 2012 Australia's expenditure to improve nutrition doubled, putting Australia in the mid-range of other donors both in terms of total expenditure (\$127 million) and as a percentage of official development assistance (2.4 per cent). However, this is only an approximate calculation, as Australia's investments in nutrition are not adequately tracked due to incomplete reporting of nutrition objectives and indicators in the aid management system.

Australia's nutrition investments are not closely aligned to the geographic focus of the aid program and the rate of stunting in particular countries. In the years 2010 and 2012 combined, most of Australia's nutrition spend was directed to regions with the greatest numbers of undernourished children, including sub-Saharan Africa (34 per cent of total nutrition expenditure), South Asia (34 per cent) and East Asia (14 per cent). Only 3 per cent was allocated to the Pacific region, which in part reflects the region's small population. However, with a like-for-like comparison, the nutrition component of the Pacific aid budget (0.4 per cent of total regional overseas development assistance [ODA]) was considerably smaller than the nutrition component of the sub-Saharan Africa aid budget (10 per cent of total regional ODA) despite these regions having comparable rates of stunting at 37 and 39 per cent, respectively. With the aid program now focused on the Indo-Pacific region, there may be a decrease in Australia's total nutrition investment in the future, unless greater attention is paid to the nutrition needs of the Pacific.

Australia allocates most nutrition funding to nutrition-sensitive interventions that address the underlying causes of undernutrition. Over half of this work is done in the rural development and food security sector, with the remaining funding delivered mainly through the humanitarian, emergency and refugee sector and the health sector. Many initiatives across all sectors have the potential to impact on undernutrition, but without explicit nutrition objectives and indicators, opportunities to improve nutrition may not be fully exploited and/or improvements in nutrition as a result of Australian investments may not be identified. Two case study initiatives in Timor-Leste, in the food security sector and the water and sanitation sector, adopted nutrition objectives and indicators mid-implementation, showing the way for other initiatives to do so where appropriate.

A small proportion of nutrition funding is allocated to nutrition-specific interventions, reflecting the fact that very little health sector expenditure has a nutrition focus. Most nutrition-specific interventions were delivered through maternal and child health activities. Although family planning and reproductive health activities implicitly promote child nutrition through birth spacing and delayed child-bearing, without an explicit nutrition orientation, these activities may miss opportunities to increase their nutrition impact by targeting nutrition counselling and supplementation at women prior to conception and during pregnancy. In one of the family planning case study activities in Timor-Leste, this was justified by key informants who noted that prioritisation of nutrition by the governments of Timor-Leste and Australia came at the end of the activity's life cycle. Accountability to donors to deliver family planning and reproductive health outcomes rather than nutrition outcomes made it risky to widen the activity's focus when it was concluding.

Investments in nutrition governance were comparatively very small. Only one initiative was identified—the South Asia Food and Nutrition Security Initiative. It aimed to improve food security and nutrition outcomes in several South Asia countries through the following interventions: research; collaboration with existing nutrition programs; advocacy and awareness activities; capacity building; and support for governments to develop nutrition policy and strategy that includes cross-sectoral coordination. Greater investment in nutrition governance

supports the capacity, accountability and responsiveness of partner governments to reduce the burden of undernutrition.

Australia's main implementing partner in nutrition is the United Nations (UN). About 70 per cent of Australia's nutrition spend in 2012 was through UN agencies and the World Food Programme in particular. DFAT's performance reporting requirements for UN agencies are at the organisational level, rather than at the level of Australia's investments, making it difficult to assess Australia's contribution to improving nutrition outcomes. More focus on UN performance in nutrition would benefit the aid program's capacity to document lessons learned.

Alignment of Australia's investments with good practice

Overall, Australia's investments to address undernutrition align with the principles of good nutrition practice, but there is room for improvement, especially in targeting specific stages of the life cycle and vulnerable groups.

- 1. Use interventions for which there is evidence of effectiveness.** The evaluation reviewed 35 interventions used by the Australian aid program to address the immediate causes of undernutrition, and found that 19 have strong evidence of effectiveness, 10 have moderate evidence of effectiveness, and five have weak evidence of effectiveness. The effectiveness of one intervention was unknown. The most common highly effective intervention used was the promotion of early and exclusive breastfeeding in infants. Interventions for addressing the underlying causes of undernutrition have complex causal pathways and there is less evidence available to understand their effectiveness. Nevertheless, Australia uses interventions generally considered to be effective, such as improving access to health services and social protection, and increasing women's control over assets.
- 2. Work across sectors.** Since the underlying causes of undernutrition cut across sectors, a multi-sectoral approach, or a single-sector initiative designed with consideration of other sectors, is recognised as good practice. Around two thirds of sampled initiatives were designed with reference to two or more sectors, although not all sector components necessarily had nutrition objectives. In some situations it is not possible, or useful, for initiatives to work across multiple sectors. An example of such a situation is when work in relevant complementary sectors is supported by other partners. Another example is when the level of resourcing available necessitates focus on a single sector in order to achieve the best outcomes.
- 3. Support country ownership and sustainability.** Individual country nutrition strategies and programs should be country-owned and built on the country's specific needs and capacities. Australia's nutrition investments are aligned with national policies on nutrition where they exist and Australia has effectively advocated for such policy where this is absent. However, Australia has performed modestly in supporting the ongoing funding of partner nutrition policies to sustain the outcomes from Australia's investments.
- 4. Use of a twin-track approach.** Undernutrition is most effectively addressed when interventions respond to both immediate and underlying causes at the same time. Such a twin-track approach can be achieved by combining nutrition-specific and nutrition-sensitive interventions in the one initiative, or by coordinating both types of interventions either across several initiatives or with the work of other donors and partner governments. Australia's investments make appropriate use of the twin-track approach.
- 5. Target specific stages of the life cycle and vulnerable groups.** The effectiveness of Australia's investments to address undernutrition could be improved by better targeting life-cycle stages to reach individuals most at risk and to minimise the intergenerational effects of undernutrition. Just over half of initiatives sampled targeted life-cycle stages. These focused on pregnant mothers, young children and women of reproductive age. Only one

initiative described an intervention aimed at adolescent girls, who, as mothers, have an increased risk of having underweight babies.

6. Australia's investments to address undernutrition could also be better targeted to vulnerable groups. Only half of initiatives sampled adequately considered the nutrition of groups such as the poor, the marginalised, ethnic minorities, and refugees. Gender was also not adequately considered. About half of the initiatives sampled disaggregated nutrition data by sex, but only one discussed gender disparities in nutritional outcomes. Inequitable intra-household food distribution favouring males—a major determinant of undernutrition particularly in South Asia—was not considered in the design nor addressed in any of the initiatives reviewed.

Opportunities to improve Australia's investments in nutrition

The evaluation found three areas DFAT should improve in order to maximise the return on nutrition investments:

1. **Improve monitoring and evaluation of nutrition investments.** Most of the initiatives sampled identified indicators in their design phase but only half actually used these to measure impact. Of the 10 initiatives that collected appropriate data to be able to measure nutritional impact, seven found a positive impact on child undernutrition. Many initiatives measured outputs instead of outcomes, but this may improve in the future with stunting being given greater prominence in the literature as the best measure of longer term change in overall child health and nutritional status. Stunting was only measured in a quarter of the initiatives sampled.
2. **Increase the nutrition capacity of DFAT staff and counterparts.** Transfer of knowledge is critical to building capacity. The case study initiatives in Pakistan and Timor-Leste highlighted that knowledge transfer was effective within posts, as well as between posts and advisors, because posts took the lead on building their own capacity in response to local issues. Canberra was considered effective when it came to transferring knowledge between country desks and posts, but Islamabad Post in particular felt that the Canberra-based Nutrition Working Group missed opportunities to learn from their positive nutrition experience and to share their lessons with other country teams. Informants in both Pakistan and Timor-Leste noted that counterparts across all levels of government had low technical capacity for nutrition programming but posts had supported counterparts to become champions for nutrition within specific sectors or local government units.
3. **Develop nutrition strategies.** DFAT currently does not have a nutrition strategy to explicate the links between nutrition and the six main aid investment priorities outlined in the 2014 development policy. The development of a cross-sectoral strategy would ensure a coherent and coordinated approach to nutrition. Additionally, DFAT posts should incorporate nutrition into their Aid Investment Plans in accordance with their judgments about the most relevant role for Australia given the country context. Evidence from the case studies in Pakistan and Timor-Leste suggest this approach helps to ensure nutrition improvements are sustainable, as Australia's investments are more likely to be carried forward by local partners.
4. The coexistence of over-nutrition and undernutrition, and the connection between them, is likely to become increasingly important. Working to address this double burden may increase the effectiveness of Australia's nutrition investments.
5. Finally, there is considerable scope for the aid program to harness the capabilities of the private sector in dealing with child undernutrition, especially in the agriculture sector where Australia has a comparative advantage. DFAT should encourage the involvement of Australian companies in activities such as sustainable farming training and crop innovation.

Recommendations

1. DFAT should improve its tracking of nutrition spend by strengthening the quality of reporting in the aid management system AidWorks. To achieve this, the Canberra-based Nutrition Working Group should provide guidance and training to staff on how to document nutrition objectives and indicators.
2. DFAT posts should ensure that the proportion of ODA invested in partner countries to address child undernutrition is appropriate given partner government priorities, the prevalence of stunting, investments by other donors and opportunities to achieve results.
3. DFAT posts should review existing and planned initiatives in the agriculture, food security, water and sanitation, social protection, and health sectors, and include nutrition objectives, interventions and indicators where relevant. Australia's large investments in the food security and health sectors offer opportunities to leverage existing spend to achieve nutrition outcomes.
4. DFAT should improve targeting of nutrition interventions to specific life stages, to women and to vulnerable populations. Gender analysis should be used to inform the design and monitoring and evaluation of initiatives, and nutrition data should be disaggregated by a range of equity markers.
5. DFAT should improve the monitoring and evaluation of nutrition investments by increasing the use of outcome indicators, especially stunting for longer term initiatives. In nutrition-sensitive sectors such as agriculture, for which evidence of the effectiveness of interventions is lacking, DFAT should prioritise nutrition monitoring and evaluation to contribute to the body of evidence of what works.
6. DFAT should develop an overarching cross-sectoral nutrition strategy that links nutrition investments with the government's six main aid investment priorities. Posts should incorporate nutrition into their Aid Investment Plans, with Canberra providing guidance on how the principles of best practice can be applied in different country contexts.

Management response

DFAT welcomes the findings of this evaluation of Australian aid and child undernutrition. Malnutrition is a significant issue for the Indo-Pacific region and a serious impediment to economic and human growth and development. Countries such as Timor Leste, Papua New Guinea and Lao People's Democratic Republic are dealing with some of the highest stunting rates in the world, and many countries, including Indonesia, face both under and overnutrition.

Nutrition is well aligned to Australia's development policy objectives. Good child nutrition improves productivity and health, promoting growth and reducing poverty. Child nutrition investments have excellent cost-benefit returns (the 2014 Global Nutrition Report estimates a median global return of \$16 for every dollar invested in nutrition), and there is a strong evidence base available to guide high performing programs. Australia has been proactive in refocusing our nutrition approach to take account of the double burden of under and overnutrition, particularly in the Indo-Pacific region, putting us 'ahead of the game' globally. Australia's strong commitment to empowering women and girls, critical to improving nutrition outcomes, provides us with further comparative advantage in helping partner countries to improve the nutrition of their people.

The evaluation demonstrates that Australian aid is making important contributions to improving nutrition and is performing well against technical benchmarks. DFAT acknowledges the areas identified in the evaluation as requiring improvement.

Moving forward, DFAT will need to work carefully to deliver the best possible nutrition portfolio in the context of a reduced aid budget, which may limit the opportunity for large new investments. To ensure we continue to support better nutrition outcomes, DFAT will produce operational guidance on nutrition for its staff, and will focus our funding on well targeted, evidence-informed investments with the greatest potential for results. This operational guidance, to be completed in early 2015, will help staff to integrate nutrition into a range of sectoral investments. In many cases this will be achieved by re-thinking program and policy dialogue, rather than new funding.

To support staff capability and knowledge management on nutrition, DFAT's Development Policy Division will continue to convene and strengthen DFAT's Nutrition Working Group (NWG). The NWG was established in 2013 to drive an evidence-based nutrition policy and programming process. With representatives from DFAT's various program and thematic areas, the NWG has commissioned and analysed global and regional nutrition evidence, exploring how DFAT can best contribute to nutrition outcomes in the region.

The Development Policy Division will also track our nutrition investments and will proactively engage with country programs to ensure nutrition is addressed as appropriate, in line with Australia's development policy.

DFAT agrees with Recommendations 1, 2, 4 and 5, and agrees in part with Recommendations 3 and 6, as detailed in Table 1.0 below.

Table 1.0 DFAT’s management response to recommendations for improving nutrition policy, planning and implementation

Recommendation	Response	Details
<p>Recommendation 1</p> <p>DFAT should improve its tracking of nutrition spend by strengthening the quality of reporting in the aid management system AidWorks. To achieve this, the Canberra-based Nutrition Working Group should provide guidance and training to staff on how to document nutrition objectives and indicators.</p>	Agree	<p>Nutrition is a high level development outcome supported by a range of sectoral investments. DFAT will continue to build our capacity to articulate and track nutrition as an outcome across our aid portfolio.</p> <p>DFAT will explore options to better track nutrition investments through the aid management system. In addition, good practice nutrition examples can be included into aid management training.</p> <p>The forthcoming operational guidance on nutrition will assist staff to document and potentially ‘tag’ nutrition investments in the aid management system.</p>
<p>Recommendation 2</p> <p>DFAT posts should ensure that the proportion of ODA invested in partner countries to address child undernutrition is appropriate given partner government priorities, the prevalence of stunting, investments by other donors and opportunities to achieve results.</p>	Agree	<p>DFAT’s aid operations are highly country and context specific, while aligned to our development policy, <i>Australian aid: promoting prosperity, reducing poverty, enhancing stability</i>. Geographic and thematic areas will allocate funding for nutrition as appropriate, with consideration to pursuing our national interest, promoting growth and reducing poverty, reflecting Australia’s value-add and leverage, and making performance count. The Development Policy Division will encourage programs to consider nutrition investments as appropriate, taking account of stunting and other nutrition indicators, partner government priorities, the political economy context, and opportunities to achieve results.</p>
<p>Recommendation 3</p> <p>DFAT posts should review existing and planned initiatives in the agriculture, food security, water and sanitation, social protection, and health sectors, and include nutrition objectives, interventions and indicators where relevant. Australia’s large investments in the food security and health sectors offer opportunities to leverage existing spend to achieve nutrition outcomes.</p>	Agree, in part	<p>DFAT will adopt nutrition-sensitive approaches as appropriate across our agriculture, food security, water, sanitation and hygiene, social protection, health, and education investments, including in humanitarian settings. We understand that this is important for improving nutrition and to help us achieve better performance and value for money, by maximising the impact of our existing and planned investments. It is also an opportunity to contribute to the evolving global evidence base on applying nutrition-sensitive approaches. Operational guidance on nutrition, currently under development, will provide practical assistance for staff working across a range of sectors to adopt nutrition-sensitive approaches.</p> <p>Progress has already been made in helping staff integrate nutrition into a range of investments. DFAT is helping to build our professional capacity for nutrition-sensitive agriculture by developing resources and guidance materials, including through our partnership with CSIRO and ACIAR under the Australian Government’s Food Systems Innovation initiative. These materials will complement the forthcoming operational guidance on nutrition.</p>
<p>Recommendation 4</p> <p>DFAT should improve targeting of nutrition interventions to specific life stages, to women and to vulnerable populations. Gender analysis should be used to inform the design and monitoring and evaluation of initiatives, and nutrition data should be disaggregated by a range of equity markers.</p>	Agree	<p>DFAT is committed to evidence-based nutrition investments, including adopting a life-cycle approach focusing on the ‘1,000 days plus’ window of opportunity for nutrition. In line with the Aid Programming Guide, design of all aid investments, including those supporting nutrition outcomes, should be informed by quality analysis, including gender, poverty and social analysis. The forthcoming operational guidance on nutrition will reiterate this message and will instruct staff to use and advocate for appropriately disaggregated nutrition data.</p>

Recommendation 5

Agree

DFAT should improve **the monitoring and evaluation** of nutrition investments by increasing the use of outcome indicators, especially stunting for longer term initiatives. In nutrition-sensitive sectors such as agriculture, for which evidence of effectiveness of interventions is lacking, DFAT should prioritise nutrition monitoring and evaluation to contribute to the body of evidence of what works.

DFAT will provide staff with guidance to strengthen nutrition monitoring and evaluation through the forthcoming guidance note on nutrition and through a range of staff training. DFAT's Performance and Quality Network, responsible for quality assuring DFAT investments, will be sensitised to good practice in monitoring and evaluation for nutrition.

It will be important for DFAT program areas to work with partner governments to strengthen national monitoring and evaluation systems, including for nutrition, considering our commitment to good aid practices.

Recommendation 6

Agree, in part

DFAT should develop an **overarching cross-sectoral nutrition strategy** that links nutrition investments with the government's six main aid investment priorities. Posts should incorporate nutrition into their Aid Investment Plans, with Canberra providing guidance on how the principles of best practice can be applied in different country contexts.

DFAT does not plan to develop an overarching nutrition strategy. DFAT will articulate the importance of nutrition for economic growth and poverty reduction, and will provide practical guidance on how to design, implement, monitor and evaluate programs across multiple sectors for nutrition results, through DFAT's forthcoming operational guidance on nutrition.

The Development Policy Division provides guidance and support to ensure nutrition is reflected in Aid Investment Plans (AIPs) appropriately. Technical support is available to DFAT staff to ensure best practice nutrition approaches in investments, including through the external Health Resource Facility.

1 Undernutrition in childhood

1.1 Improving nutrition for children: a development priority

Undernutrition in young children is a key development challenge. In low- and middle-income countries undernutrition is associated with between one third¹ and half of child deaths.² Of those children that survive undernutrition, more than a quarter—or 165 million children³—are stunted. This has negative consequences that extend throughout their lives. Growing awareness at DFAT posts that economic growth does not necessarily translate into better nutrition outcomes for children provided the impetus for this evaluation.

The Australian Government's 2014 development policy⁴ identifies early childhood nutrition as 'a critical driver of better development outcomes'. Child undernutrition is an important issue for many countries in the Indo-Pacific region, the geographic priority of Australia's development assistance. Addressing child undernutrition is necessary for the achievement of the Australian aid program's two development objectives: human development and private sector development.

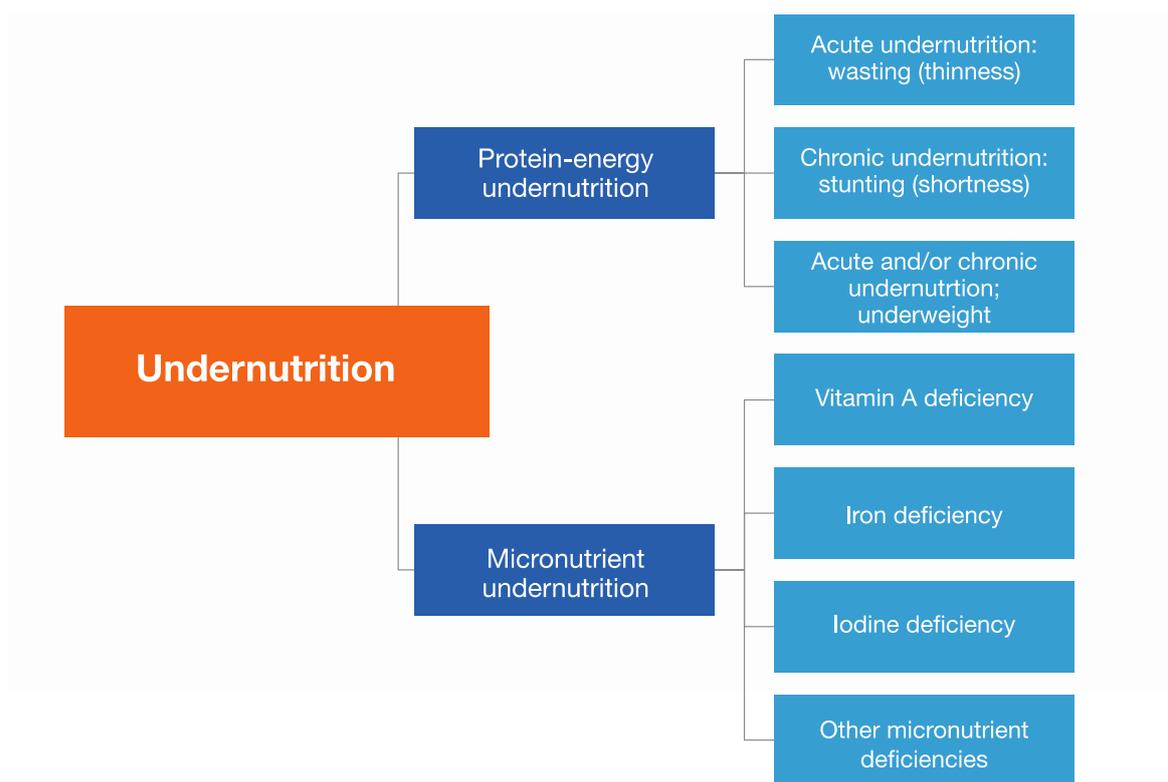
The Australian aid policy identifies two investment priority areas as supporting early childhood nutrition: education and health; and agriculture, fisheries and water. Other investment priorities are also very relevant to child nutrition. Given that undernutrition has a strong gender bias, improving gender equality will improve childhood nutrition. Strengthening institutions that deliver health and education services underpins child nutrition. Child nutrition is also improved through humanitarian assistance and social protection.

Investments to reduce child undernutrition have the potential to be very cost-effective. In May 2012, the Copenhagen Consensus Center convened the third global Expert Panel to analyse the costs and benefits of different approaches to tackling the world's biggest development problems. The highest ranked solution was to spend US\$3 billion annually over four years on a package of interventions to reduce undernutrition in children aged less than 5 years.⁵ Addressing child undernutrition also ensures value for money by protecting other aid investments. For example, children need to be well nourished to fully benefit from the educational opportunities supported by Australian aid.

1.2 Types and consequences of undernutrition

There are two main types of undernutrition: (1) micronutrient undernutrition; and (2) protein-energy undernutrition (Figure 1.1). Both have harmful effects on children, which can be irreversible. The two types of undernutrition are commonly present at the same time. See Appendix 1 for a glossary of technical terms used in the evaluation.

Figure 1.1 Types of undernutrition



1.2.1 Clinical syndromes

Deficiencies of particular nutrients can lead to a range of clinical syndromes. The most common deficiencies affecting the health of children are vitamins including A and folate, and elements including iodine, iron and zinc. In some Southeast Asian countries, thiamin deficiency is common. These deficiencies can have a broad range of harmful effects including increased susceptibility to infectious diseases, intellectual disability and anaemia.

1.2.2 Impaired growth and development

Particular nutrients, including protein, energy, zinc, magnesium, potassium and sodium, are required for growth. Depletion or poor absorption of these nutrients in young children can lead to slowed skeletal growth and a loss of, or failure to accumulate, muscle mass and fat.⁶ When growth is impaired children become underweight (low weight-for-age). Children may be underweight because of wasting (low weight-for-height) or stunting (low height-for-age),⁷ or both.

Wasting (thinness) is a sign of acute undernutrition, often seen in famines and where there is environmental/climatic stress and conflict. Children affected by wasting experience sudden extreme weight loss.

Stunting (shortness) is a sign of chronic undernutrition. It reflects the cumulative effects of undernutrition starting at conception and continuing after birth. Stunted growth does not only affect a child's height, it also affects their metabolic and intellectual development. The proportion of children stunted is considered to be the most useful anthropometric indicator for quantifying levels of undernutrition (and predicting outcomes).

1.2.3 Increased susceptibility to disease

Both types of undernutrition compromise the immune system, increasing susceptibility to and severity of infections such as pneumonia, intestinal infections, malaria, measles and other infections.⁸ A child who is severely underweight is 9.5 times more likely to die of diarrhoea than

a child who is not, and for a stunted child the risk of death is 4.6 times higher. Repeated infections also contribute to undernutrition, creating a negative feedback loop.⁹

1.2.4 Long-term consequences

Undernourishment in childhood is associated with poorer health and wellbeing across the life course. Undernourishment in children aged less than 2–3 years predicts poorer cognitive and educational outcomes in childhood and adolescence.^{10,11} This has consequences later in life, including reduced economic productivity and future earnings.¹² Adults who were undernourished as children are more likely to experience high blood pressure and obesity, and associated chronic diseases including diabetes and cardiovascular disease.¹³

1.2.5 Intergenerational consequences

Women and adolescent girls who are undernourished or who were undernourished as children are more likely to have lower birth-weight babies.¹⁴ Low birth weight is associated with increased mortality and poorer health. Undernutrition, therefore, has intergenerational effects. However, if the health and nutrition of mothers who were undernourished in childhood are improved before conception (and possibly even during pregnancy), outcomes for their children are profoundly improved.¹⁵

1.3 A window of opportunity: the first 1000 days of life

Providing the right nutritional support for children aged less than 5 years, and particularly those aged less than 2 years, is pivotal for a healthy life. The first 1000 days of a child's life between conception and 2 years of age is considered to be a 'window of opportunity', as it is the most critical period to focus nutrition interventions. Healthy growth between birth and 2 years of age is associated with improved school performance.¹⁶ In contrast, stunting before 2 years of age has harmful effects that are largely irreversible. Furthermore, studies have shown that 'catch-up' or accelerated growth after this age might increase an individual's risk, and potentially their children's risk, of adult obesity and comorbidities.^{17,18}

1.4 The prevalence of child undernutrition

Undernutrition is a worldwide problem but it is more severe in some regions (Figure 1.2). The levels of child undernutrition in populations can be compared using stunting as an indicator. In 2013, about half of all stunted children lived in Asia and over one third in sub-Saharan Africa.¹⁹ In Asia, most of the children affected by stunting (62.5 million) are in South Asia—Bangladesh, India, Nepal and Pakistan in particular.²⁰ Lower but still large numbers of stunted children live in Southeast Asia (16 million), particularly Indonesia where it has proved difficult to achieve improvement.²¹

While the absolute numbers of stunted children are largest in South Asia and sub-Saharan Africa, the prevalence of stunting is equally high in regions which have smaller populations. Of particular relevance to the Australian aid program is the prevalence of child stunting in Oceania. Overall, stunting rates in this region in 2013 were the highest in the world (39 per cent, Figure 1.3), and in some Pacific countries rates have not improved substantially since the 1990s.

In Southeast Asia, also a priority area for Australia, overall rates of stunting are also high (29 per cent), with rates in some countries, notably Cambodia, Laos and Timor-Leste, being particularly high.

Figure 1.2 The numbers of children (in millions) who are wasted, stunted or underweight, in each Millennium Development Goal region, 2013

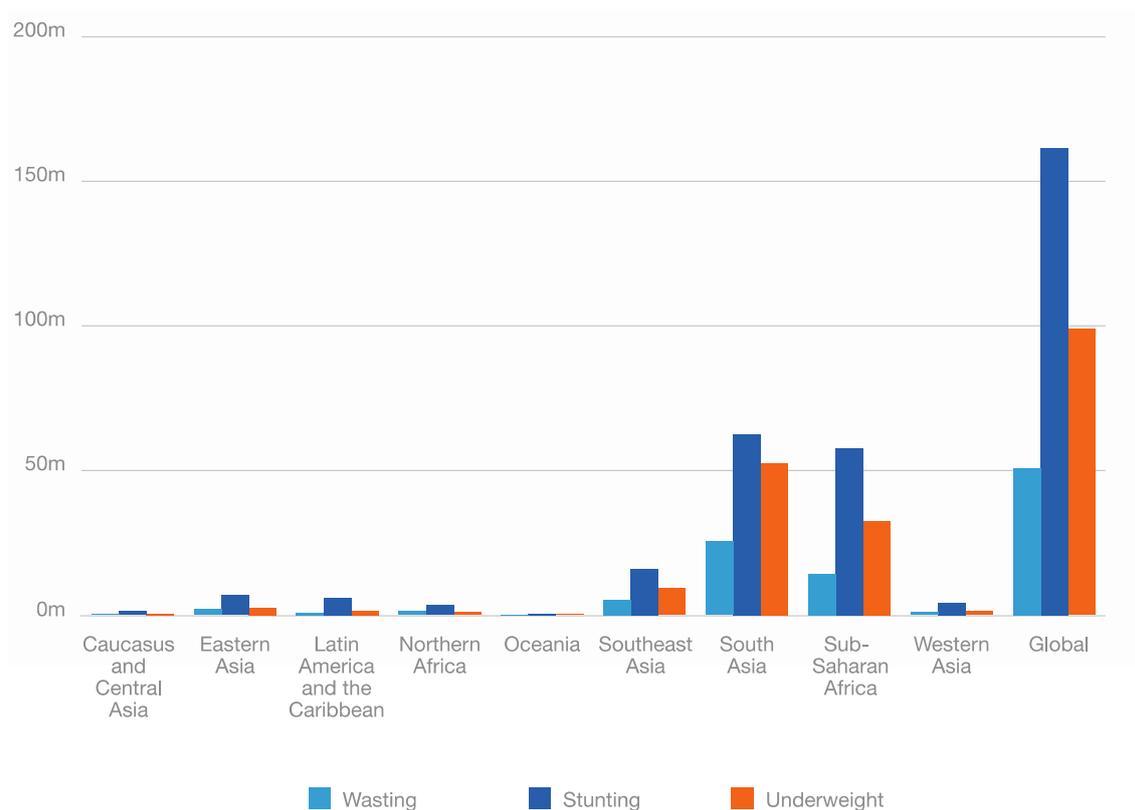
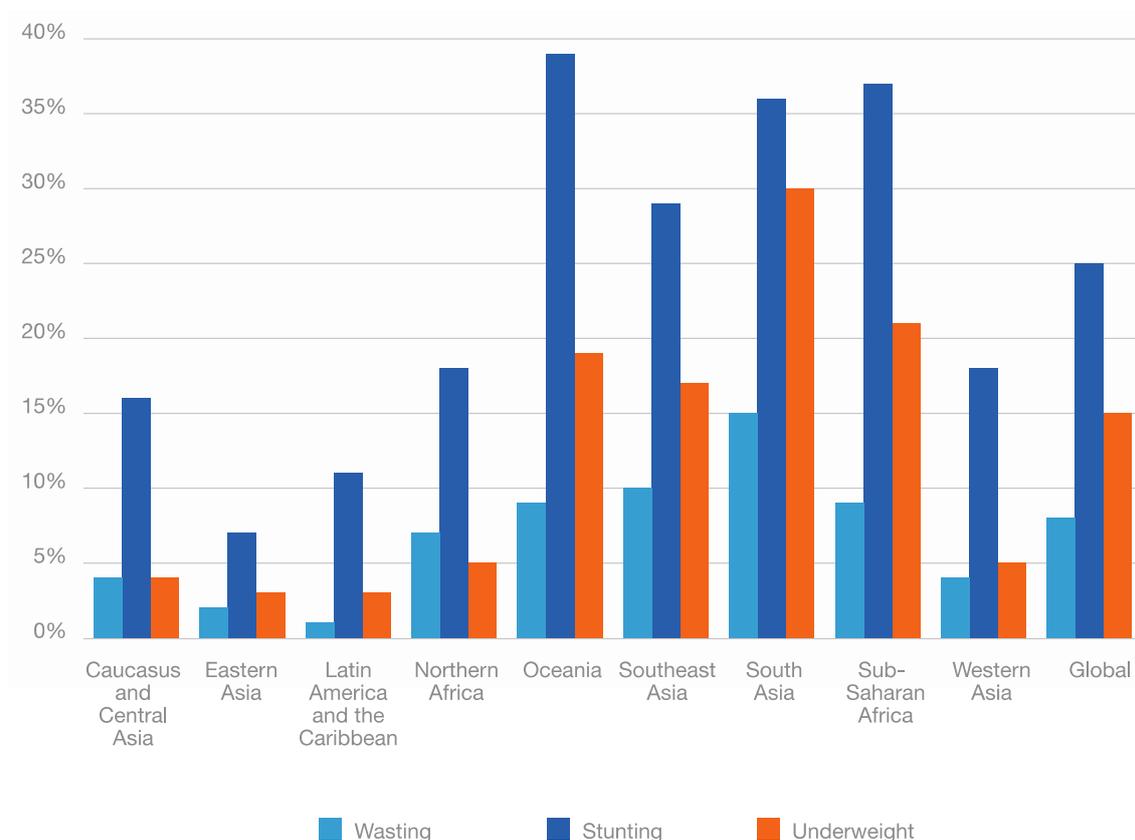


Figure 1.3 The prevalence of children who are wasted, stunted or underweight, in each Millennium Development Goal region, 2013



Source: *Regional prevalence and numbers for wasting and severe wasting* <http://apps.who.int/gho/data/view.wrapper.nutrition-1-7?lang=en&showonly=nutrition> (accessed 27.10.2014); *Regional prevalence and numbers of stunting and underweight* <http://apps.who.int/gho/data/view.wrapper.nutrition-1-5?lang=en&showonly=nutrition> (accessed 27.10.2014)

1.5 Causes of undernutrition

Undernutrition is caused by factors operating at the level of the individual (immediate causes), household (underlying causes) and society (basic causes).

1.5.1 Immediate causes

Factors which operate at the level of individuals and make them undernourished are considered immediate causes of undernutrition.

Inadequate food intake is an important immediate cause of undernutrition. Food intake may be inadequate because there is not enough food or the food available is deficient in particular nutrients.

Infectious diseases (including diarrhoea, acute respiratory infections, malaria and measles) are strongly correlated with undernutrition in children. Infectious diseases negatively affect child nutrition in proportion to the severity and chronicity of infection.²² At the same time, undernutrition can increase the impact of infectious diseases, leading to a vicious cycle.

Inadequate care of infants and young children can have a negative impact on child nutrition. Appropriate feeding practices, as recommended by the World Health Organization (WHO), include breastfeeding initiation within one hour of birth, exclusive breastfeeding for the first six months, and appropriate complementary feeding beginning at 6 months of age, with breastfeeding continuing until 2 years of age and beyond.

1.5.2 Underlying causes

Underlying causes of undernutrition operate at the household level.

Lack of access to safe water, adequate sanitation facilities and basic hygiene practices results in repeated exposure to water-related diseases, such as intestinal worm infections which inhibit the absorption of nutrients.²³ Exposure to these diseases in early childhood is associated with stunting.^{24,25} It is estimated that 50 per cent of the total disease burden of undernutrition is attributable to these environmental factors.²⁶

Inadequate household access to food is an important cause of child undernourishment globally. The inability to purchase foods is increasingly a barrier to nutrition for the urban poor, especially in crises when the prices of foods rise. In rural settings, household food insecurity occurs during the annual 'hungry season', preceding the harvest when available food stocks are at their lowest.²⁷

Low agricultural productivity can result in household food insecurity. Improvements in agricultural productivity can increase the quantity of food consumed by households.²⁸ However, if the increased productivity is achieved through mono-crop production or crops that are nutrient-poor, improvements in child nutrition are less likely.²⁹

Low status of women correlates strongly with child undernutrition in developing countries.³⁰ Social stressors on mothers, such as poverty, violence and heavy workloads, can increase undernutrition in their children.³¹ Where women have little control over how resources are allocated within the household, resources are less likely to be allocated to children's nutrition and health.³² The inability of women to access and control the use of resources for their own wellbeing, including the distribution of food within the household, has a significant negative impact on the nutrition and health of their children.³³

1.5.3 Basic causes

Factors which operate at the societal level and place households at risk of exposure to the underlying and immediate causes of child undernutrition are classified as basic causes of undernutrition. Two critical basic causes are poverty and weak governance.

Poverty places direct constraints on households' ability to access food and health services, and provide care in the immediate term.³⁴ Evidence indicates that poverty also has longer term impacts on child nutrition by severely limiting households' capacity to make investments that have positive nutritional impacts. For example, a study in South India found that poor rural households typically select low-risk, low-return crops rather than investing in high-risk, high-return crops, because they do not have the financial reserves to manage the higher risk of low yields in the short term.³⁵ Within a society, child undernutrition may be most severe in particular groups due to inequitable distribution of wealth and resources.

Weak governance can affect child nutritional status because it is central to several key domains that influence nutrition: the provision of public goods and services, including water and sanitation; the level of equity in access to health and education services; gender equality; and the design and degree of social protection.³⁶

1.5.4 Geographic variation in the causes of undernutrition

There are differences in the causes of undernutrition both across and within regions and countries. Undernutrition occurs in middle-income as well as low-income countries, as inequity can lead to the impoverishment of some groups. Countries with weak governance may also have higher rates of undernutrition because politicians who are not accountable to citizens are not incentivised to make nutrition policies and provide public services that are responsive, effective and sustainable.³⁷

The high rates of child undernutrition in some regions have links to cultural practices. For example, in South Asia there are gender disparities in infant care (with infant boys receiving better care than infant girls) and in access to quality foods within households (with women and girls having less access). Many households in South Asia also practise open defecation which exposes children to infections transmitted by faeces, which may result in reduced ability to absorb nutrients.

In some regions the coexistence of over-nutrition and undernutrition is an increasing problem. The Pacific region faces this double burden. Typically, mothers and other adults in the household are overweight but children are underweight. For example, in Nauru 90 per cent of adult females are overweight while the prevalence of stunting is 24 per cent. Undernutrition in infancy is thought to alter the body's metabolism, which increases the likelihood adults are overweight. The double burden can make messaging on preventing undernutrition a challenge.

1.6 Interventions that address child undernutrition

There is broad international consensus on the types of interventions that most effectively address child undernutrition. *The Lancet* has published two series on maternal and child undernutrition which have helped influence international thinking and been a catalyst for greater attention to maternal and child nutrition within low- and middle-income countries and among development partners.

In January 2008, *The Lancet* published the first series on maternal and child undernutrition.³⁸ The five papers comprising the series quantified the prevalence of maternal and child undernutrition, calculated their short-term and long-term consequences, and estimated their potential for reduction through high and equitable coverage of proven nutrition interventions.

The series identified the need to focus on the crucial first 1000 days of life. In June 2013, *The Lancet* published a second series on maternal and child nutrition.³⁹ This series identified the importance of adolescent girls' nutrition and also the growing problem of over-nutrition.

The interventions and classifications referred to in this report are largely based on the 2013 *Lancet* series on maternal and child nutrition as well as other evidence reviewed for this evaluation.

1.6.1 Nutrition-specific interventions

Nutrition-specific interventions address the immediate causes of child undernutrition. They target the 1000-day 'window of opportunity' covering pregnancy and the first two years of life, since this provides the best chance of preventing stunting and cognitive impairment.⁴⁰ Nutrition-specific interventions also target mothers, who are often adolescent girls, during or after pregnancy as their health directly affects the nutrition status of their children. Examples of nutrition-specific interventions include maternal dietary or micronutrient supplementation; promotion of breastfeeding and appropriate complementary feeding; dietary supplementation; treatment of severe acute undernutrition; prevention and management of moderate acute undernutrition; and supply of food in crises.



Mother Stephanie with nurse weighing baby Edwin at Susa Mama health clinic, Port Moresby General Hospital, Papua New Guinea. Photo by Ness Kerton for DFAT.

1.6.2 Nutrition-sensitive interventions

Nutrition-sensitive interventions address the underlying causes of child undernutrition and can be incorporated into a range of sector programs. Examples of nutrition-sensitive interventions include plant breeding (agriculture); cash transfers (social protection); safe faeces disposal (water, sanitation and hygiene); health professional training on nutrition (health systems); and girl's enrolment in school (education). Nutrition-sensitive interventions can also serve as delivery platforms for nutrition-specific interventions, potentially increasing their scale, coverage and effectiveness.

1.6.3 Interventions addressing basic causes of undernutrition

Interventions that create an enabling environment for investments in nutrition address the basic causes of child undernutrition. These investments take the form of laws, regulations, policies, promotion of economic growth, and improvements in governance capacity.

1.7 Global efforts to improve child nutrition

The global commitment to nutrition is stronger than it has ever been. In 2013, 51 countries, businesses and civil society groups signed an agreement at the Nutrition for Growth Summit in London to make nutrition one of the world's top development priorities. The signatories pledged to provide more than US\$4 billion in extra support for nutrition by 2020. Australia was one of more than 20 donor countries at the summit and subsequently joined the Scaling Up Nutrition (SUN) movement.

Established in 2010, the SUN movement aims to unite governments, civil society, the United Nations (UN), donors, businesses, researchers, the private sector and citizens in a worldwide collective effort to end undernutrition.⁴¹ There are currently 54 SUN member countries, including the following key Australian aid partner countries: Bangladesh, Indonesia, Laos, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka and Vietnam.

The SUN movement advocates country ownership, multi-sectoral coordination (including actions in cross-cutting areas like gender equality, governance and state fragility), the inclusion of civil society and other stakeholders in decision-making, and a focus on the first 1000 days of life. SUN also promotes public-private partnerships through the SUN business network, reflecting growing recognition of the role of the private sector in addressing undernutrition through food production, employment and income generation.

The newly launched Global Nutrition Report (2014), which was spurred by the Nutrition for Growth Summit, notes that many countries have overlapping burdens of stunting, wasting and overweight in children aged less than 5 years, making the double burden of over-nutrition and undernutrition the new global norm. The SUN movement is considering how it should adapt to this new reality, having previously only focused on undernutrition.

Nutrition is likely to feature in the forthcoming global Sustainable Development Goals, which follow on from the Millennium Development Goals after 2015.

2 About the evaluation

2.1 Purpose of the evaluation

The purpose of this evaluation is to provide an evidence-based analysis of how the Australian aid program addresses child undernutrition, and to identify opportunities for improvement. It is expected to contribute to organisational learning by informing the development and/or strengthening of relevant policy, both for the aid program as a whole, and in partner countries where child undernutrition is a significant development challenge.

The evaluation set out to answer three questions:

1. How does Australian aid policy and programming address child undernutrition?
2. To what extent does this approach align with the evidence and principles of effective practice?
3. What opportunities exist to improve how Australian aid addresses child undernutrition?

2.2 Data sources and methods

Four analyses were used to answer the evaluation questions: evidence review; financial analysis; document review of a sample of initiatives; and in-depth analysis of four case studies.

2.2.1 Evidence review

A review of the international literature was conducted to determine undernutrition prevalence; the effectiveness of interventions commonly used to address child undernutrition according to evidence; and donor policies on nutrition. The [evidence review](#) is available on the webpage of the Office of Development Effectiveness (ODE).

The interventions examined were defined according to the 2013 *Lancet* series and are listed at Appendix 2. Effectiveness was rated according to the consistency of observed effects across studies and/or the strength of association between the intervention and nutrition outcome.

Effectiveness ratings:

- › **Strong:** Consistent effect across multiple populations with direct associations between intervention and nutrition outcome.
- › **Moderate:** Positive associations between intervention and nutrition outcome observed; however, without consistency across populations.
- › **Weak:** No evidence for a direct association and/or inconsistent effect of intervention on nutrition outcome.

2.2.2 Financial analysis

The SUN Donor Network developed a methodology for tracking nutrition-specific and nutrition-sensitive investments. Donors were asked to supply their total spend in both of these categories for the calendar years 2010 and 2012. The work undertaken by the DFAT aid statistics team to

report Australia’s spend has been used for this evaluation. It is important to note that the SUN methodology includes all investments to address undernutrition rather than being limited to those that specifically focus on child undernutrition. Also, figures cited should be taken as approximations as Australia’s investments in nutrition are not adequately tracked due to incomplete reporting of nutrition objectives and indicators in the aid management system. In addition, the methodology for counting nutrition sensitive disbursements is not precise, and the definition of nutrition sensitive investment varies between donors.

Box 2.1: SUN methodology to track global investments in nutrition

Nutrition-specific flows are those defined by the Organisation for Economic Co-operation and Development’s (OECD’s) Development Assistance Committee (DAC) Creditor Reporting System (CRS) code 12240 (basic nutrition).

To be determined nutrition sensitive, the actions must fulfil all of these criteria:

- Aimed at individuals: the actions must intend to improve nutrition for women or adolescent girls or children (though they do not necessarily need to be targeted to women and children); and
- The project has a significant nutrition objective (beyond just mentioning nutrition) OR nutrition indicator(s); and
- The project must contribute to nutrition-sensitive outcomes, which are explicit in the project design through activities, indicators and specifically the expected results themselves.

In the SUN methodology, nutrition-sensitive investments have sub-categories of ‘dominant’ and ‘partial’ depending on the extent to which they contribute to better nutrition (Table 2.1). Investments deemed to be partially nutrition sensitive had 25 per cent of their disbursements counted. These disbursements, along with 100 per cent of disbursements for investments deemed to be dominantly nutrition sensitive, were then tallied by DFAT at the activity level.

Table 2.1 SUN methodology for quantifying nutrition-sensitive investment

Sub-category of nutrition sensitive investments	Criteria	Proportion of investment included	Numerical example for \$1 000 000 investment
Dominant	When the full investment (its main objective, results, outcomes and indicators) is nutrition sensitive	100%	\$1 000 000 would be included
Partial	When part of the project (e.g. one of the objectives, results, outcomes and indicators) is nutrition sensitive	25%	\$250 000 would be included

It is important to note that the definition of nutrition-sensitive investments is not always clear cut and can differ between analyses. For example, DFAT’s financial analysis assumes that humanitarian food drops are not nutrition sensitive except where the following organisations are responsible for delivering the aid: World Food Programme; United Nations Children’s Fund (UNICEF); Plan International; World Vision Australia; and Caritas Australia. These organisations have policies in place that stipulate that nutrition needs are addressed in both emergency and non-emergency settings. Similarly, core contributions from Australia to these aid organisations were also considered to be nutrition sensitive. Other donors make different assumptions.

2.2.3 Document review of a sample of initiatives

An analysis of program documentation was undertaken to assess how well initiatives in a purposive sample align with the principles of best practice in nutrition programming. The sampling frame, initially made up of 1054 initiatives potentially relevant to nutrition based on their sector, was reduced to around 600 through filtering by OECD Development Assistance

Committee (DAC) sector and 'type of aid' codes. Australian Centre for International Agricultural Research (ACIAR) projects were excluded from the analysis as, until recently, ACIAR projects have not had explicit nutrition objectives and therefore have not monitored nutrition outcomes. However, DFAT funding to ACIAR was included. Keyword searches were used to reduce the sample to 50 initiatives. The number of initiatives was further reduced to 20 by excluding initiatives without a nutrition objective or indicator.

The target sample size of 25 initiatives was not reached for two main reasons:

1. It was difficult to find relevant initiatives in the aid management database due to low-quality and inadequate reporting of nutrition objectives and indicators. Three of the initiatives analysed were not identified in the searches but through consultation with DFAT staff.
2. Some highly relevant initiatives had to be excluded due to lack of available documents. These included initiatives managed by other government departments and those with exemptions from performance reporting. Exemptions are given to initiatives with budgets under \$3 million (since 2014 this threshold has been increased to \$10 million) and humanitarian aid initiatives.

Documents were analysed for 20 nutrition initiatives from 15 countries (10 nutrition specific, 9 nutrition sensitive, one nutrition governance, Appendix 2). It should be noted that only two of the 20 sampled initiatives were designed primarily to address child undernutrition. The objectives of the remaining initiatives were focused more broadly than child undernutrition, with nutrition interventions commonly embedded in larger programs such as maternal and child health.

Documents reviewed included but were not restricted to: quality at implementation (QAI) reports, quality at entry (QAE) reports, design documents, independent evaluations, and monitoring and evaluation reports. Where multiple QAIs were available, the most recent was used to obtain internal quality criteria ratings. Efforts were made to obtain a complete set of supporting documents for each initiative through contact with initiative managers within DFAT, through partner organisations and via web searching. Variation in the quality of available documentation between initiatives affects the reliability of the findings. Furthermore, program documentation does not provide sufficient evidence to make judgments about the quality of less tangible practices such as policy dialogue and knowledge management. Such judgments require interview evidence, but interviews were only conducted for the case study initiatives.

2.2.4 In-depth analysis of four case studies

The evaluation included a detailed analysis of four case studies—one nutrition-specific activity and three nutrition-sensitive initiatives. The nutrition-specific activity was the Strengthening Comprehensive Nutrition Interventions for Children and Women in Khyber Pakhtunkhwa and Balochistan, implemented over one year in Pakistan. The three nutrition-sensitive initiatives investigated in Timor-Leste were: Seeds of Life (SoL), Phase III, a food security initiative; Rural Water and Sanitation Program, Phase II (BESIK II), a water and sanitation initiative; and the Family Planning and Reproductive Health Services initiative, which is composed of three activities (Family Planning and Reproductive Health Services, Support for Improved Maternal and Newborn Care, and Support in Procurement of Family Planning Commodities). Summary details of the four case studies are at Appendix 2.

Interviews were conducted with 10 people for the Pakistan case study and 13 people for the Timor-Leste case studies. Interviewees came from implementing partners; government stakeholders; external agencies and DFAT.

A comprehensive document review was undertaken for the case studies, including 19 documents related to the Pakistan case study and 42 documents related to the Timor-Leste

case study. The documents reviewed included those describing the national nutrition contexts (e.g. National Nutrition Survey and Nutrition Strategies); DFAT country and sector strategies and initiatives (e.g. design documents, QAI reports, QAE reports, monitoring and evaluation reports).

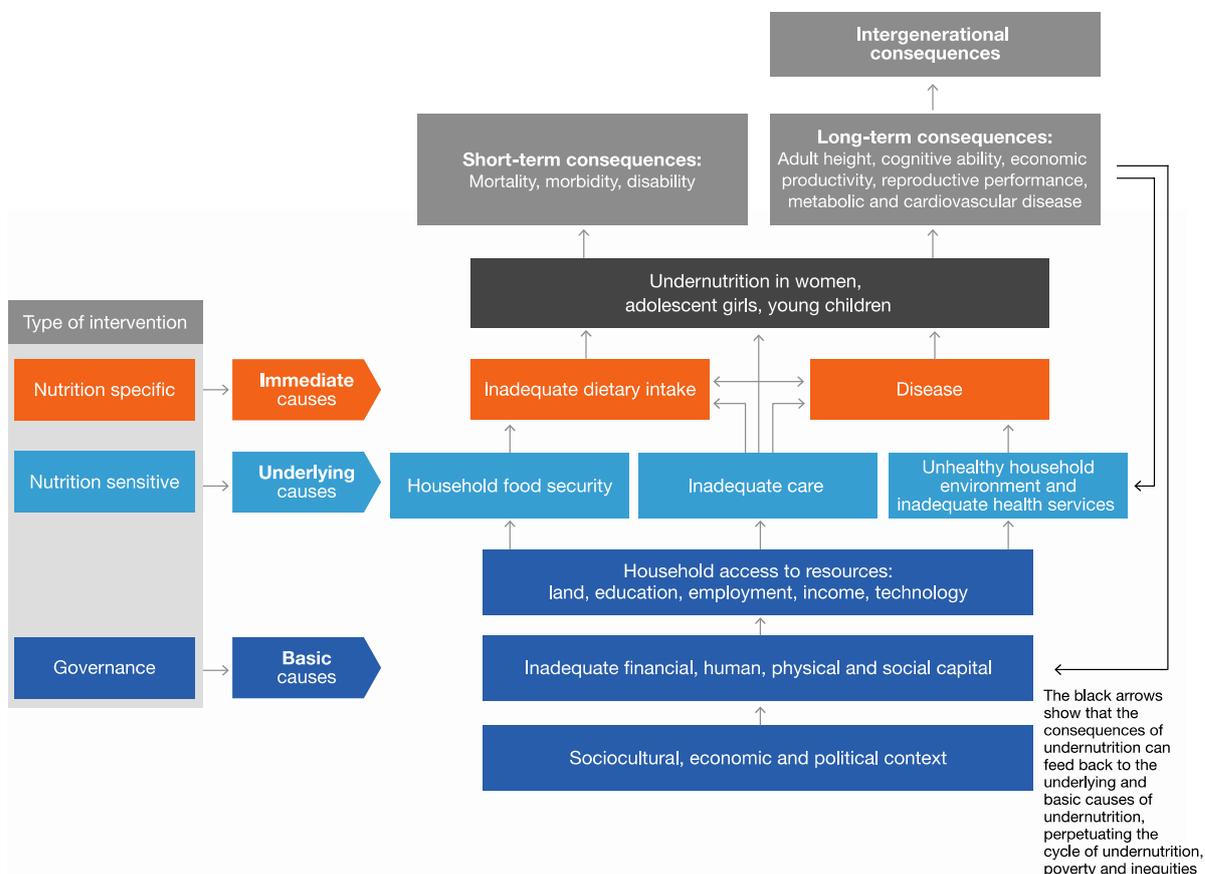
There were limitations to the quality of information available to the team as well as limitations to data collection. Routine design documents were not available for the nutrition activity in Pakistan. The design was in the form of a proposal from WHO and UNICEF to the Australian Agency for International Development (AusAID). It was appraised by an AusAID peer review team, and then revised into a final proposal. Conflict and insecurity made it impossible for Australian aid staff to visit and independently undertake monitoring activities. As a result of this and the absence of routine monitoring and evaluation reports for any of the case study initiatives, this evaluation had to rely on secondary data provided by the implementing partners.

In Timor-Leste, design and peer review documents for two of three case study initiatives (SoL III and BESIK II) were reviewed. The third case study initiative (Family Planning and Reproductive Health Services), which was made up of three separate activities, did not have a unified design document or design documents available for each separate activity.

2.3 Conceptual framework

This evaluation is focused on children aged less than 5 years (and particularly those aged less than 2 years), and women and adolescent girls of child-bearing age. The conceptual framework that this evaluation uses is based on the UNICEF framework⁴² for improving child nutrition (Figure 2.1) with a number of expansions and refinements. Adolescent girls were included, as per the recommendation of the 2013 *Lancet* series on maternal and child nutrition.⁴³

Figure 2.1 UNICEF conceptual framework of child undernutrition



3 Australia's nutrition investments

3.1 Tracking Australia's investments

Australia's level of investment in nutrition is not adequately tracked in DFAT's aid management system. For nutrition-specific initiatives, this is because not all initiatives carry the DAC code of 'basic nutrition'. For nutrition-sensitive initiatives, this is due to incomplete reporting of nutrition objectives and indicators. If investment cannot be tracked, results achieved are also missed.

Recommendation 1

DFAT should improve its tracking of nutrition spend by strengthening the quality of reporting in the aid management system AidWorks. To achieve this, the Canberra-based Nutrition Working Group should provide guidance and training to staff on how to document nutrition objectives and indicators against initiatives.

3.2 Quantifying Australia's investments

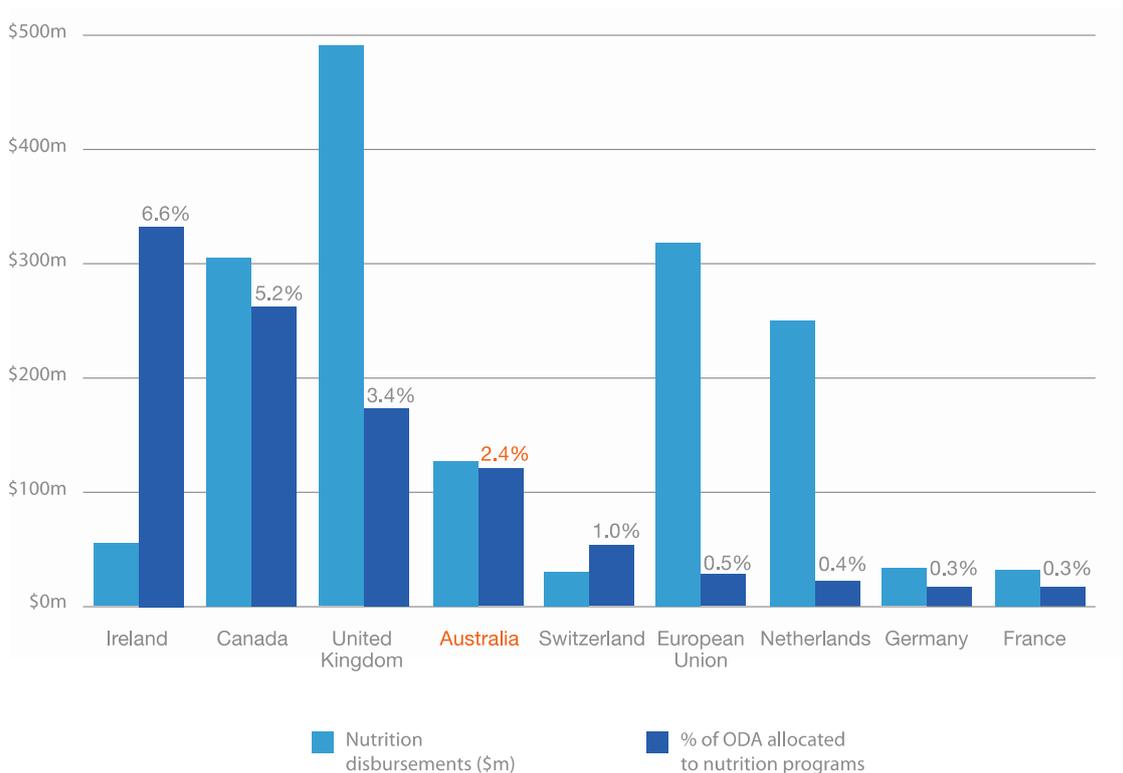
Australia and other donors pledged to increase their investment in nutrition at the 2013 Nutrition for Growth Summit. A common methodology to track donor investments has been developed by the SUN Donor Network. Australia and other SUN donors calculated their level of investment in addressing undernutrition, not just child undernutrition, for the years 2010 and 2012, as a baseline for scaling up. The figures cited in this chapter should be taken as approximations due to the following methodological issues:

- › Inadequate tracking of nutrition investments in DFAT's aid management system, which may underestimate Australia's investment. This may also be a problem for other donors.
- › The definition of nutrition-sensitive investments may vary between donors. For example, some donors did not count humanitarian emergency aid as nutrition sensitive, but Australia did if it was provided by organisations which have policies that stipulate that nutrition needs are addressed in both emergency and non-emergency settings.
- › Nutrition-sensitive expenditure has not been calculated precisely. Donors agreed that 100 per cent of an investment's disbursements would be counted if its main objective is nutrition sensitive, and 25 per cent of its disbursements would be counted if only one of its objectives is nutrition sensitive. This could inflate or deflate the actual nutrition component.

The nutrition disbursements of Australia are compared with those of other SUN donors in Figure 3.1 using the latest data available, which are those from 2012. On the basis of these data, Australia's expenditure was in the mid-range of other donors both in terms of total expenditure and as a percentage of official development assistance (ODA).

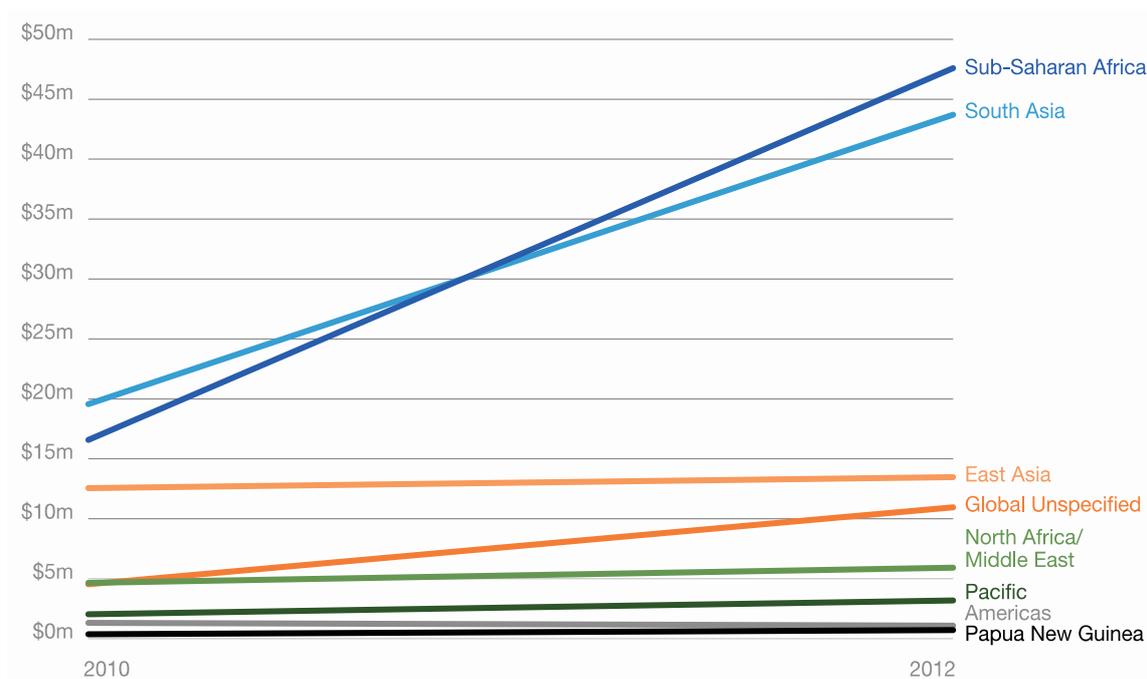
Australia's investment in nutrition nearly doubled from 2010 to 2012. Australia spent 1.5 per cent of ODA in 2010 and 2.4 per cent in 2012 on nutrition programs. This corresponds to an additional \$65 million being spent on nutrition. However, this increase was largely a consequence of an additional \$31 million to sub-Saharan Africa and \$24 million to South Asia (Figure 3.2).

Figure 3.1 Comparison of Australia's nutrition disbursements in 2012 with those of other SUN donors both in terms of total expenditure and as a percentage of official development assistance



Source: International Food Policy Research Institute, 2014. *Global Nutrition Report 2014: Actions and Accountability to Accelerate the World's Progress on Nutrition*, <http://globalnutritionreport.org/> p. 85 (Appendix 4, Table A.4); Organisation for Economic Co-operation and Development (OECD), 2013, <http://www.oecd.org/dac/stats/statisticsonresourceflowstodevelopingcountries.htm> Table 4 – Net Official Development Assistance by DAC Country (accessed 27.10.2014).

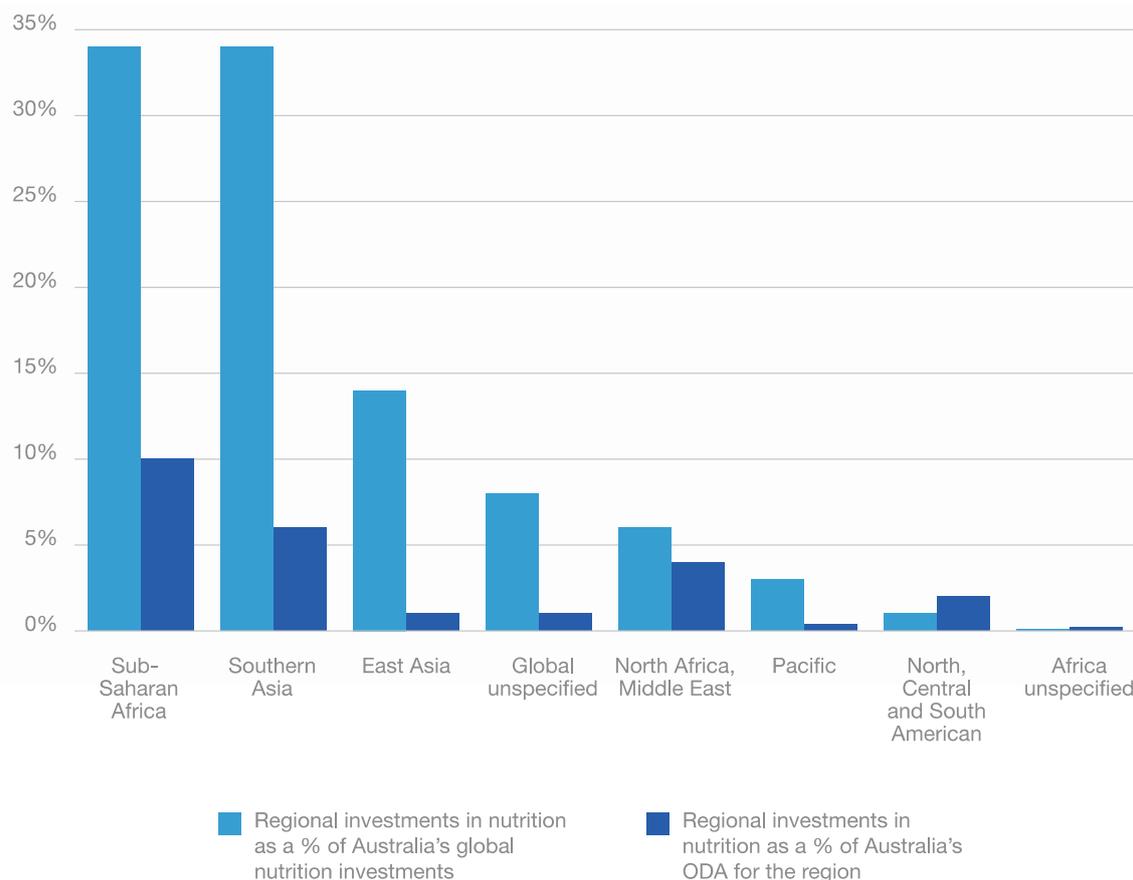
Figure 3.2 Growth in Australian nutrition disbursements between 2010 and 2012



3.3 Geographic focus of investments

For the years 2010 and 2012 combined, most of Australia’s investments in nutrition were in three regions: sub-Saharan Africa (34 per cent of total nutrition expenditure), South Asia (34 per cent) and East Asia (14 per cent) (Figure 3.3). All of these regions, but especially sub-Saharan Africa and South Asia, have large numbers and high prevalence of children who are underweight, stunted and/or wasted.

Figure 3.3 Australia’s regional nutrition disbursements (total value for 2010 and 2012 combined)



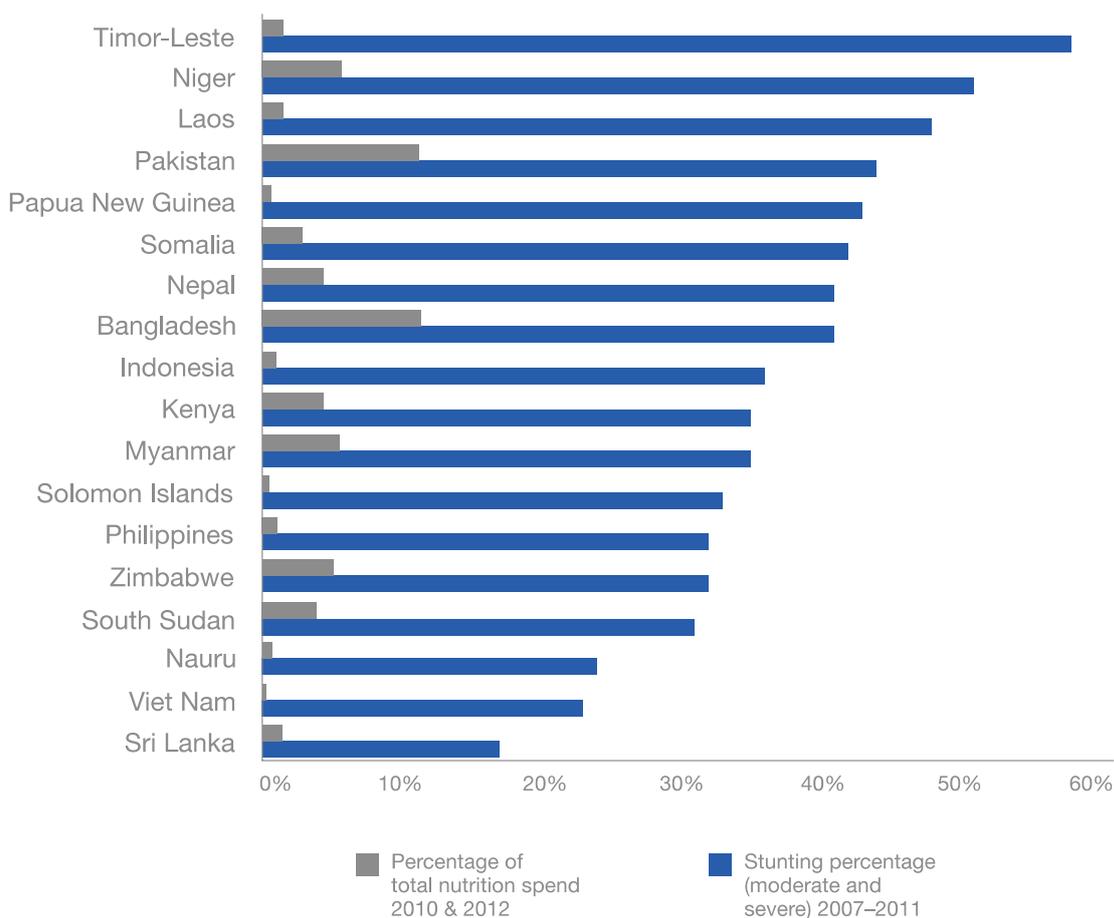
For many countries and regions, Australia’s investment in nutrition as a proportion of total ODA does not match the severity of undernutrition. The numbers of undernourished children in the Pacific region (0.5 million stunted children) are not on the same scale as those in the regions that receive most of Australia’s nutrition spend. Therefore, it may initially seem appropriate that only 3 per cent of total Australian nutrition expenditure was allocated to the Pacific region. However, the prevalence of child stunting in the Pacific region (39 per cent) is comparable to that in sub-Saharan Africa (37 per cent). Despite this, in the years 2010 and 2012 combined, only 0.4 per cent of all Australian aid to the Pacific region was for nutrition, whereas 10 per cent of Australian aid to sub-Saharan Africa was for nutrition.

Of particular note is the small proportion of Australian aid allocated to nutrition in major partner countries that have some of the highest rates of stunting in the world. Despite stunting rates estimated to be in excess of 40 per cent in Papua New Guinea, in the years 2010 and 2012 combined, Australia only allocated 0.1 per cent of total country ODA to nutrition. Also, Papua New Guinea receives only 0.6 per cent of Australia’s total investment in nutrition. In Timor-Leste stunting rates exceed 50 per cent but only 1.1 per cent of Australian ODA was allocated to

nutrition. This corresponds to only 1.5 per cent of Australia’s total investment in nutrition (Figure 3.4).

Country-specific Aid Investment Plans should consider whether the proportion of aid allocated to nutrition is appropriate given partner government priorities, the prevalence of stunting, the level of engagement with nutrition by other donors, and opportunities to achieve results. Where stunting rates are unknown it may be necessary for posts to make an informed judgment that nutrition is a concern and to test this judgment through supporting a national nutrition survey.

Figure 3.4 Australia’s nutrition disbursements and stunting prevalence in selected countries



Source: UNdata, Stunting prevalence estimates (2007–2011), UNICEF, 2013. *The State of the World’s Children*. <http://data.un.org/Data.aspx?d=SOWC&f=inID:106> (accessed 10.12.2014)

Indonesia Post has recently incorporated nutrition in its new Aid Investment Plan, due for launch in mid-2015. It includes stunting as one of the country-level targets in the performance framework for the entire DFAT Indonesia development cooperation program. This reflects growing nutrition awareness and knowledge amongst DFAT staff in Indonesia, combined with a new mandate from the Government of Indonesia for the Australian aid program to invest in nutrition given the country’s continuing high stunting rate despite strong economic growth.

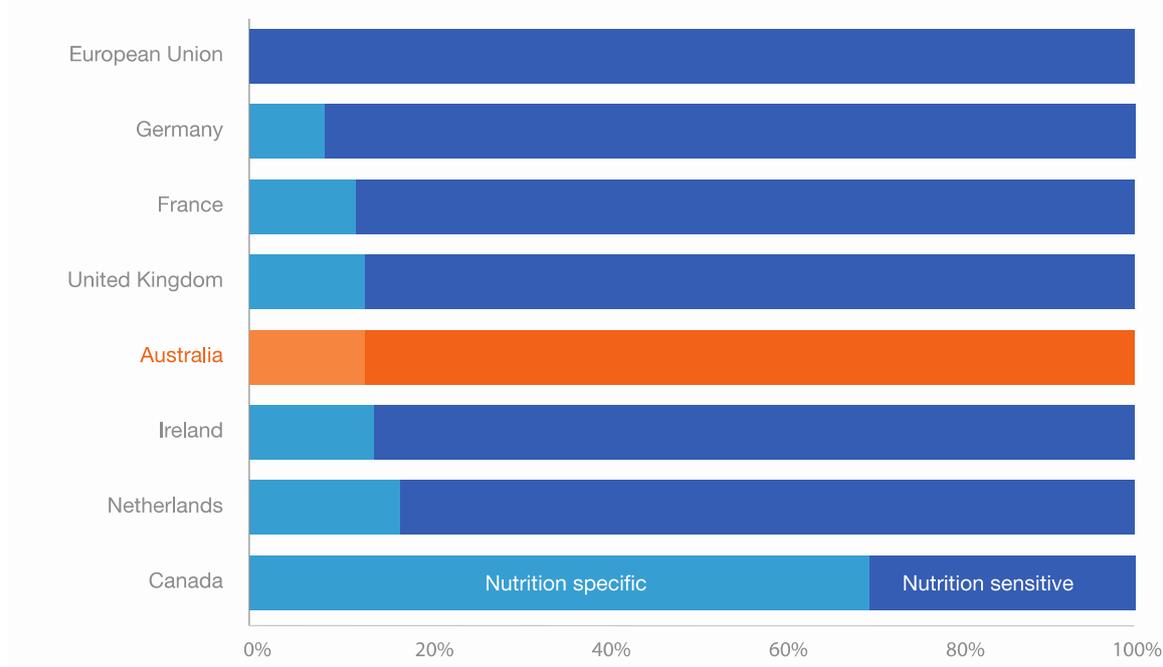
Recommendation 2

DFAT posts should ensure that the proportion of ODA invested in partner countries to address child undernutrition is appropriate given partner government priorities, the prevalence of stunting, the level of engagement with nutrition by other donors, and opportunities to achieve results.

3.4 Focus on nutrition-sensitive investments

Australia, like other donors, allocates most nutrition funding to nutrition-sensitive investments, with much lower levels of funding being allocated to nutrition-specific investments (Figure 3.5).

Figure 3.5 Proportion of donor nutrition investments for 2012 that are nutrition-specific or nutrition-sensitive

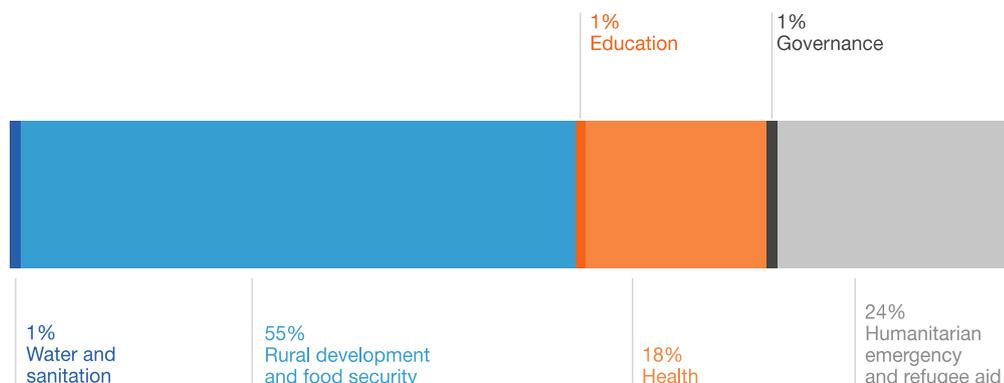


Source: International Food Policy Research Institute, 2014. *Global Nutrition Report 2014*: Appendix 4, Table A.4, page 85.

3.5 Investments in nutrition by sector

Most of Australia’s investment in nutrition-sensitive interventions was channelled through the rural development and food security sector (55 per cent, Figure 3.6), followed by the humanitarian emergency and refugee aid sector (24 per cent) and health sector (18 per cent).

Figure 3.6 Sectoral allocations of nutrition-sensitive investments for 2012



The Early Recovery Food Security Somalia initiative is an example of a nutrition-sensitive initiative in the rural development and food security sector. This agricultural development and social protection initiative responded to the high undernutrition rate in Southern Somalia in early 2011. The nutrition objectives were to increase household dietary diversity as well as overall food and nutrition security. The initiative addressed the underlying and basic causes of undernutrition by improving vegetable and seed distribution; targeting women to increase

female control over assets; restoring crop and fodder production; enhancing the health and numbers of livestock; providing cash-for-work opportunities; and improving fishing capacity.

From the financial analysis and review of project documents it is clear that in all sectors, many initiatives which have the potential to be nutrition sensitive do not have explicit nutrition objectives and indicators. While most nutrition-sensitive initiatives are in the rural development and food security sector and the health sector, nutrition makes up a small part of funding in these sectors. Only 12 per cent of total expenditure in the rural development and food security sector and 4 per cent of total expenditure in the health sector is designed to contribute to better nutrition outcomes. Without specific objectives and indicators, opportunities to improve nutrition may not be fully exploited or improvements in nutrition as a result of Australian investments may not be reported.

While initiatives may not have incorporated nutrition objectives and indicators at the design stage, it is possible to increase the focus on nutrition during implementation. The Seeds of Life initiative in Timor-Leste is an example of an initiative that was modified during implementation to become nutrition sensitive (Box 3.1).

Box 3.1: Seeds of Life: Exploiting existing investments to improve nutrition

Seeds of Life (SoL) aims to increase food security in Timor-Leste through increased productivity of new and improved food crop varieties. SoL III commenced in February 2011. The initiative builds on the two earlier phases to select improved food crop varieties, scale up seed production through formal and informal channels and strengthen government institutions relevant to effective seed production systems for food crops.⁴⁴ It is the largest program in the subsistence sector in Timor-Leste with a budget of \$32.3 million over 12 years, starting 2004-05.

Since 2013, in the context of heightened awareness of nutrition within the aid program in Timor-Leste, SoL III has demonstrated increased attentiveness to the potential nutrition outcomes of the initiative. In early 2013, SoL III commissioned a team of specialists to develop a nutrition-sensitive agriculture strategy for the Ministry of Agriculture and Fisheries (MAF) and SoL.⁴⁵

Nutrition interventions include training of agriculture staff on basic nutrition. A non-government organisation (NGO) trained the gender team composed of MAF and SoL staff, as well as MAF-appointed district gender focal points, on health and nutrition issues. This included how to prepare and consume nutritious local foods. The MAF-SoL team developed nutrition and cooking training that was suited to women members of community seed production groups and focused on obtaining nutritional value from the 11 more productive varieties of the five staple crops (rice, maize, peanut, sweet potato and cassava). Such interventions help strengthen the linkages between increased seed quality and better nutrition for families.

While these interventions have the potential to have an impact on nutrition, at this early stage of SoL's reorientation towards nutrition, there are no data to confirm their effectiveness. How the training courses have influenced nutrition knowledge and practices should be determined. An indicator such as 'increased dietary diversity' would assist the team to understand nutrition outcomes, but such an indicator has not, as yet, been incorporated.

Recommendation 3

DFAT posts should review existing and planned initiatives in the agriculture, food security, water and sanitation, social protection, and health sectors, and include nutrition objectives, interventions and indicators where relevant. Australia's large investments in the food security and health sectors offer opportunities to leverage existing spend to achieve nutrition outcomes.



One of the high-yielding maize varieties (SW5) that has been tested through the Seeds of Life program in Timor-Leste, 2010. Photo: ACIAR/DFAT.

3.6 Limited support for nutrition-governance initiatives

Greater investment in nutrition governance supports the capacity, accountability and responsiveness of partner governments to reduce the burden of undernutrition.⁴⁶ It is also a priority area for the SUN movement. Only 2.5 per cent of Australia's nutrition spend was channelled through the governance sector in 2010 and this dropped to just 0.4 per cent in 2012. The only nutrition-governance initiative identified for this evaluation is the South Asia Food and Nutrition Security Initiative (SAFANSI). It provides a good example of the practical application of the principles of good nutrition governance.⁴⁷

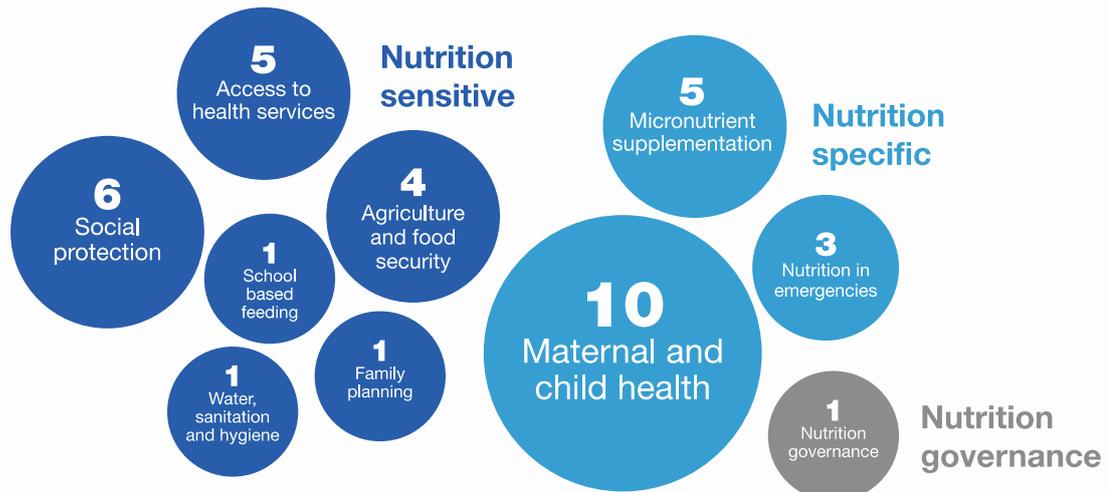
SAFANSI is a multi-donor-funded initiative with an Australian contribution of close to \$6 million. It aims to improve food security and nutrition outcomes in several South Asia countries in a context of high undernutrition prevalence. The initiative uses the following interventions: research; collaboration with existing nutrition programs; advocacy and awareness activities; capacity building; and support for governments to develop nutrition policy and strategy that includes cross-sectoral coordination.

An independent evaluation of SAFANSI in late 2012 (funded by the United Kingdom's Department for International Development and Australia) concluded SAFANSI is well placed to play a catalytic role in addressing two critical gaps: the need for more evidence-based policies and programs, and facilitating multi-sectoral approaches to food and nutrition security. However, DFAT's support to SAFANSI is phasing down as a review of the South Asia Regional Program in 2013 concluded that bilateral programs are better placed to address human development and service delivery

3.7 Types of activities that deliver nutrition interventions

In the sample of initiatives examined for this evaluation, the majority of nutrition-specific interventions were delivered via maternal and child health activities. Nutrition-sensitive interventions were delivered through a wide variety of activities, including social protection, access to health services and food security (Figure 3.7).

Figure 3.7 Types and numbers of activities that deliver nutrition interventions in 20 sampled initiatives



There was a notable absence of family planning and reproductive health activities with an explicit nutrition focus. Family planning activities implicitly promote child nutrition through birth spacing and delayed child-bearing⁴⁸ but also offer opportunities to target nutrition counselling and supplementation to women prior to conception and in pregnancy. However, as illustrated by the Family Planning and Reproductive Health Services activity in Timor-Leste described in Box 3.2, incorporation of an explicit nutrition orientation is not always appropriate or useful.

Box 3.2: Perceived risks of adopting an explicit nutrition orientation in an activity at the end of its life cycle

The Family Planning and Reproductive Health Services activity in Timor-Leste did not include an explicit nutrition orientation. Stakeholders interviewed for the evaluation were well aware of the links between the anticipated outcomes from this activity and maternal and child nutrition, but questioned the value of adding nutrition objectives. One stakeholder listed the constraints to adopting a nutrition orientation:

- The activity and its implementing partner were required to be accountable to donors to deliver what the activity was designed to deliver, which was family planning and reproductive health outcomes, rather than nutrition outcomes.
- There were strategic and ethical implications of re-packaging family planning as a nutrition or child health intervention, rather than as an intervention premised on women’s bodily autonomy, designed to support longer term gender equity outcomes.
- There were pragmatic concerns about the capacity of the activity to be reoriented when it was close to completion. It was imperative to retain a focus on existing deliverables in order to achieve these. Re-training of staff to develop their nutrition capacity and amending contracts to

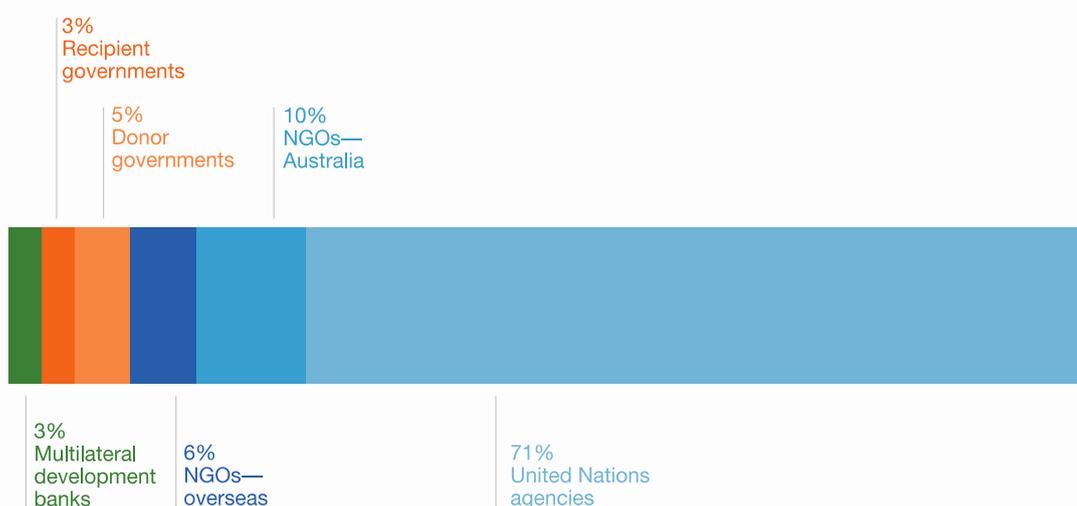
cover nutrition-related activities were raised as potential significant constraints to reorienting the activity.

- The evidence is strong that increased birth spacing leads to improved maternal and child nutrition outcomes. Therefore, given the potential risks and difficulties of introducing a nutrition orientation to an activity that is already underway, it is not clear that adopting a nutrition objective and measuring nutrition indicators would be beneficial for overarching health and development outcomes.

3.8 UN agencies are the main implementing partners

UN agencies implement around 70 per cent of Australia’s nutrition investments (Figure 3.8). Non-government organisations (NGOs)—both those based in Australia and overseas—receive around 16 per cent of Australia’s funding for nutrition work.

Figure 3.8 Implementing partners used for Australia’s nutrition investments showing allocations to each type of partner expressed as a percentage of total nutrition investments for 2010 and 2012



Funded UN agencies include WHO, UNICEF, Food and Agriculture Organization of the United Nations (FAO) and the World Food Programme (WFP). These organisations have a long track record of work to improve child survival and nutrition. They implement a very broad range of programs which include both nutrition-specific and nutrition-sensitive interventions, and they often operate in emergency situations to provide supplementary feeding.

The types of nutrition-specific interventions implemented by UN agencies include breastfeeding promotion,⁴⁹ multiple micronutrient supplementation for pregnant women,⁵⁰ facility- and community-based management of severe acute undernutrition, and the provision of ready-to-use micronutrient-fortified powders (to be added to weaning foods) to households.⁵¹

Many diverse nutrition-sensitive interventions are implemented by UN agencies, including programs that improve women’s education, workload and emotional wellbeing,⁵² food storage systems,⁵³ home gardens,⁵⁴ food supply systems,⁵⁵ and food distribution integrated with social protection mechanisms such as cash or voucher schemes.⁵⁶

The WFP receives most of the nutrition funding provided by Australia to UN agencies. In 2010, the WFP accounted for 50 per cent of Australia’s nutrition spend with the UN, and in 2012 this increased to 79 per cent. The broad range of work undertaken by the WFP to address undernutrition is illustrated by the \$2.5 million provided by Australia to the Support for WFP

Bangladesh initiative. In response to high undernutrition prevalence among the Rohingya refugees in the Cox's Bazar district of Bangladesh, the WFP distributed rations, facilitated community management of moderate and severe acute undernutrition, including specific targeting of children aged 6–23 months and adolescent girls, introduced school feeding and established a livelihoods scheme.

An independent evaluation is required for Australian aid investments of more than \$10 million. UN agencies are exempt from this requirement because DFAT has separate processes in place to track UN performance. However, an assessment of broader multilateral performance is not sufficient to determine nutrition performance. While the UN does evaluate its nutrition activities, if these are part of a larger program, the nutrition component may not receive sufficient attention for DFAT to be able to assess their effectiveness. Likewise, the scope of UN evaluations focused specifically on nutrition may be significantly broader than Australia's funding contribution, making it difficult to assess the quality and outcomes of nutrition interventions supported by Australia. Given that the majority of DFAT's nutrition support goes through UN channels, more focus on their performance would benefit the aid program's capacity to document lessons learned.

Box 3.3: An example of partnering with the UN from the Pakistan case study

The Pakistan case study activity provides insight into the advantages and disadvantages of partnering with the UN. Advantages of the partnership were the experience and expertise of the UN agencies (WHO and UNICEF) in designing and implementing the activity. Disadvantages were the Australian aid program's limited input into the design and the lack of independent evaluation.

Background to the activity

The activity aimed to prevent undernutrition-related morbidity and mortality in children aged less than 5 years and improve the nutritional status of pregnant and lactating women in nine food-insecure districts. The aid modality chosen (multilateral implementing partners) was based on positive experiences with the One UN funding mechanism for humanitarian initiatives following the Pakistan floods in 2011.

High-quality program proposal

The program proposal was justified by a rigorous analysis of the nutrition status of women and children in Pakistan⁵⁷ and explicitly stated that it would support nutrition-specific interventions based on evidence summarised in the 2008 *Lancet* series on maternal and child undernutrition.

Limited input into design

The activity did not develop using a standardised design process, which limited opportunities for review. Rather, the Australian aid program responded to a proposal from WHO and UNICEF, which included analysis and activity design. While the activity did go through a peer review process—including requests from peer reviewers for clarification on how the program would work in relation to government systems and processes, to existing activities in two provinces, and to the SUN Framework⁵⁸—it is unclear how much change resulted from these requests.

Effective implementation

The activity's aims of reducing and treating acute undernutrition in children were largely achieved during the 12-month implementation period.⁵⁹ The activity achieved or surpassed targets for screening children for undernutrition, establishing sites for community-based management of acute undernutrition, and treating children with severe acute undernutrition in the outpatient therapeutic program and/or inpatient care.⁶⁰ Performance indicators of community-based management of acute undernutrition were well within the recommended Sphere⁶¹ minimum standards, with a cure rate above 75 per cent, a default rate below 15 per cent and a death rate below 3 per cent.⁶² All of the

targeted care givers of children aged less than 5 years, and pregnant and lactating women were reached with nutrition education messages, mainly focusing on improved infant and complementary feeding practices.⁶³ Nearly 83 per cent of the children from the focus communities were reached with multi-micronutrient supplements. The only objective that was not fully achieved was providing micronutrient supplements to pregnant (59 per cent) and non-pregnant (26 per cent) young women.

Limited evaluative material

The activity was exempt from an independent evaluation so DFAT had to rely on output data provided by the implementing partners to assess the activity's impact.

4 Alignment of investments with good practice

The 2013 *Lancet* series on maternal and child undernutrition⁶⁴ and the synthesis of up-to-date global thinking presented in the evidence review for this evaluation highlighted the most important principles to guide contemporary approaches to addressing undernutrition. The evaluation has developed and used the following checklist of good practice:

- › Nutrition initiatives use interventions which have been found to be effective.
- › Nutrition initiatives adopt a multi-sectoral approach, as appropriate. This involves collaboration across interrelated sectors to achieve nutrition objectives.⁶⁵
- › Nutrition initiatives adopt a twin-track approach. That is, initiatives combine a focus on addressing immediate and underlying causes of undernutrition.
- › Nutrition initiatives support country ownership and strong, country-led nutrition governance (including coordination across sectors, ministries, and stakeholders inside and outside government).
- › Nutrition initiatives are informed by a life-cycle approach to women's and maternal health and nutrition, with an emphasis on the intergenerational effects of undernutrition.

4.1 Interventions used are effective according to evidence

The Australian aid program mostly uses interventions which have been shown to be effective in reducing child undernutrition. The evaluation reviewed 35 interventions used across 10 **nutrition-specific initiatives** and found that 19 have strong evidence showing them to be effective, 10 have moderate evidence of effectiveness, and five have not been found to be effective. The effectiveness of one intervention was unknown (Table 4.1).

Of the 16 different types of interventions identified in the sample of nutrition-specific initiatives, effective interventions were chosen to address both protein-energy undernutrition and micronutrient undernutrition. An example of this is the Child Survival and Nutrition Initiative II in Nepal which had a budget of \$800 000. Interventions included a national expansion of early and exclusive breastfeeding promotion, iron supplementation of pregnant women and periodic supplementation of vitamin A for children aged 6–59 months. There is strong evidence to support the use of all three of these interventions for addressing child undernutrition.

Detailed assessment of the effectiveness of interventions used in **nutrition-sensitive initiatives** was not undertaken. The causal pathways linking nutrition-sensitive interventions with improvements in nutrition status are complex, with substantial evidence gaps. However, the main types of interventions used in the sample are considered to have moderate evidence to support their effectiveness. These include improving access to health services and social protection, and increasing women's control over assets. A summary review of the effectiveness of interventions is at Appendix 3.

Table 4.1 Strength of evidence supporting the effectiveness of interventions implemented in sampled nutrition-specific initiatives

Intervention	Strength of evidence supporting effectiveness	Number of nutrition-specific initiatives implementing intervention
Promotion of early and exclusive breastfeeding in infants	Strong	5
Facility-based management of severe acute undernutrition according to WHO protocol in non-emergency settings	Strong	3
Supplementary feeding of moderate malnourished in emergency settings	Strong ^a	2
Periodic vitamin A supplements in children aged 6 months to 5 years	Strong	3
Community-based management of severe acute undernutrition with ready-to-use therapeutic foods in non-emergency settings	Strong	1
Promotion of appropriate complementary feeding in children aged 6–24 months	Strong	1
Supplementary feeding of adolescent girls	Strong	1
Therapeutic feeding of severely malnourished in emergency settings	Strong ^b	1
Iron or iron-folic acid supplements for pregnant women	Strong for reducing maternal anaemia; moderate for reducing low birth weight	2
Maternal education on infant and young child feeding and child care	Moderate; strong when delivered as part of compressive approach	2
Prevention or treatment of moderate undernutrition in non-emergency settings	Moderate	4
Multiple micronutrient supplements for pregnant women	Moderate effect on anaemia	1
Deworming drugs for infected children	Moderate	3
Growth monitoring	Weak	4
School feeding	Weak	1
Pre-school lunches in emergency settings (opportunistic supplementary feeding)	Unknown	1

a, b There is a strong evidence base to support protocols developed by WHO and the UN for management of global acute malnutrition (GAM) and severe acute malnutrition (SAM) in nutritional emergency situations.

4.2 Initiatives make appropriate use of a multi-sectoral approach

Since the underlying causes of undernutrition cut across many sectors, a multi-sectoral approach, or a single-sector initiative designed with consideration of other sectors, is recognised to be good practice. Around two thirds of sampled initiatives (14 of 20) were designed with reference to two or more sectors (Table 4.2). However, not all sectoral components necessarily had nutrition objectives.

Table 4.2 Use of multi-sector approach in sampled initiatives

Designed with reference to two or more sectors	Nutrition specific (n=10)	Nutrition sensitive (n=9)	Nutrition governance (n=1)
Yes	6	7	1
No	4	2	

The most frequent combination of sectors used was food security and agriculture (five initiatives). For three of these initiatives there was also a social protection component. Otherwise, the following combinations each occurred three times:

- > health and social protection
- > health and food security
- > health, and water and sanitation
- > food security, and water and sanitation.

Box 4.1: Working across sectors

An example of working across sectors is the food security, nutrition, and water, sanitation and hygiene (WASH) initiative in Rwanda. The objective of the initiative was to reduce undernutrition in children aged less than 5 years (underweight/stunting) and pregnant/lactating women. The objective was based on high undernutrition prevalence estimates, particularly child stunting, and gender inequality identified as one underlying cause of undernutrition. The initiative worked across agriculture, health and WASH sectors. Agriculture strategies implemented were the provision of seeds and support for household livestock ownership, which is linked to increased milk availability, and importantly food utilisation through community education. Health strategies implemented were nutrition education for health centre personnel/agriculture workers, and training/support for mothers to manage moderate acute undernutrition. WASH strategies were to improve access to clean water and sanitation.

In some situations it is not possible, or useful, to work across multiple sectors. An example is when work in relevant complementary sectors is supported by other partners. Another example is when the level of resourcing available necessitates focus on a single sector in order to achieve the best outcomes.

The Pakistan case study activity provides an example of consciously choosing to work in one sector. The decision to support nutrition-specific interventions through a single sector was justified by DFAT key informant, Pakistan 7 (KIP7), paraphrased as follows: *Within this context, it was imperative to make investments that protected service delivery and would achieve maximum impact. The nutrition interventions implemented were known to be effective according to evidence and the nutrition program was the weakest and least resourced out of all Government of Pakistan programs.*

An interesting finding of the Pakistan case study was that although work was restricted to a single sector, some interviewees felt that it created opportunities for advocacy work which helped shift federal and provincial governments towards a multi-sectoral approach to nutrition. Non-DFAT informant KIP4 provided concrete examples: *'[W]ithin ... four months, we had good negotiations with [the] Planning and Development Department, and several other line ministries, and we shifted the steering committee from Health to Planning and Development ... The multi-sectoral approaches were accepted ...'*

DFAT informant KIP8 described change achieved at the provincial level: 'By working on the project activities there were ... no cross-sectoral activities carried out, but it did pave the way for

the future to work on those, because when the provinces ... started working on those policy guidance notes [on taking a multi-sectoral approach to nutrition] then along with that there was also a debate that started, to work on the provincial intersectoral strategy for nutrition, and that ... debate was also started on those [provincial] workshops that were carried out in those provinces.'

However, one non-DFAT informant (KIP1) claimed that opportunities for great cross-sectoral action were missed: '[Why not] support Balochistan [where the provincial Department of Agriculture is on board with supporting nutrition] on the agriculture side? ... AusAID and ... other donors were supporting ... [a] multi-sectoral approach to nutrition ... But when we were trying to mobilise resources ... the doors were pretty much closed because donors have traditional budget lines ... and AusAID was one of them.'



Boy gets water from a tap at a Nepal Water for Health (NEWAH) WASH water project in Puware Shikhar, Udayapur District, Nepal. Photo by Jim Holmes for DFAT.

4.3 Investments support country ownership and sustainability

The evaluation found that Australia's nutrition investments are aligned with national policies on nutrition where they exist and that Australia has effectively advocated for such policy where this is absent. However, Australia has performed modestly in supporting the ongoing funding of partner nutrition policies for sustainability.

One of the core elements of the SUN Framework for Action is to 'start from the principle that what ultimately matters is what happens at the country level. Individual country nutrition strategies and programmes, while drawing on international evidence of good practice, must be country-"owned" and built on the country's specific needs and capacities'.

Analysis of program documentation found that while 10 of 20 initiatives aimed to coordinate with partner governments generally, only seven aligned specifically with partner country nutrition strategies (Table 4.3). In some contexts, alignment is not possible as partner governments do not have nutrition strategies, or those that do exist are relatively new and do not have strong underlying institutional architecture or political commitment. The cross-cutting

nature of nutrition requires a multi-sectoral response, and it is challenging for partner countries to design a coherent, comprehensive nutrition policy and strategy with buy-in from all relevant sectors.

Table 4.3 Partner country alignment and relevance within sampled initiatives

		Nutrition specific (n=10)	Nutrition sensitive (n=9)	Nutrition governance (n=1)
Aims to support partner government's own nutrition strategies or policies	Yes	4	2	1
	No	2		
	N/A	4	7	
Supports the development of or engages with country coordination mechanisms for nutrition	Yes	2	N/A	1
	No	7		
	N/A	1		

In many partner countries, particularly those where nutrition has only recently become a government priority, the process of developing nutrition policies and strategies is complex and ongoing. The Australian aid program has managed to align with partner countries despite shifts in their nutrition policies and strategies. In Pakistan, for example, the case study activity was implemented in an evolving policy and institutional context, characterised by the ongoing development of the Pakistan Integrated Nutrition Strategy (PINS) but further complicated by devolution of health responsibilities to the provincial level and the disbanding of the Ministry of Health. A key informant underlined the difficulty of policy dialogue at the central level in this environment: *'Devolution under the 18th amendment of the Constitution made it challenging to have a policy dialogue [on nutrition between the Federal Government of Pakistan and development partners]. The Federal Ministry of Health was disbanded. The National Nutrition Coordinating Council [meant to be established under PINS] has not become a reality'* (KIP6, DFAT). Nevertheless, the activity was designed to align with available nutrition strategies, namely the draft PINS and the National Maternal, Newborn and Child Health Strategic Framework, as DFAT informant KIP8 confirmed: *'The activity was aligned ... keeping the needs of those strategies in mind.'* Non-DFAT informant KIP4 agreed: *'Two years prior to that [the activity start date], this [the nature of the activity] was agreed with provincial and ... federal government ... So it was widely discussed in line with their policies and strategies.'*

Australian aid has also been used successfully to advocate for the development of nutrition policies. In the case study countries Pakistan and Timor-Leste, UNICEF-supported nutrition surveys were integral to recognition by the governments and development partners that nutrition was an important health and development issue. Australian aid was used to support the dissemination of survey results and build momentum.

In both countries, Australian aid program staff attended working groups and forums relevant to nutrition and worked to build coherence and consensus on the approach to nutrition—both within government and among development partners. For example, in Pakistan, Australia engaged directly with the process of policy evolution at the provincial level to support the development of multi-sectoral nutrition policies and coordination bodies, even where this had not been a part of the aid activity's original design. Non-DFAT informant KIP9 complimented Australia for being such an active advocate at the national level: *'AusAID has been the most active [development partner in nutrition and] promoting the SUN movement. They co-chair the DP [development partners] working group on nutrition.'*

In both Pakistan and Timor-Leste, DFAT posts identified sectors to incorporate nutrition advocacy that would resonate with the national government's priorities. In Timor-Leste, several informants felt that explicit nutrition advocacy would not be as effective as advocacy on sectors

that contribute to nutrition outcomes. As such, nutrition advocacy was integrated into SoL and BESIK which were designed to address the Government of Timor-Leste's priority areas of food security, and water and sanitation, respectively. SoL has been operating for more than a decade and BESIK for seven years. Both initiatives have well-developed plans to eventually integrate into the relevant Government of Timor-Leste ministries, providing opportunities for policy dialogue on nutrition. SoL III supported the development of a nutrition-sensitive agriculture strategy subsequently adopted by the Ministry of Agriculture and Fisheries. Although nutrition is not an explicit objective of BESIK II, it includes the nutrition-specific indicator of stunting and the nutrition-sensitive indicator of diarrhoea incidence. As explained earlier (Box 3.2), the family planning activity did not adopt an explicit nutrition orientation, but it is seen as implicitly contributing to nutrition outcomes.

In contrast to these case studies of successful policy dialogue and advocacy, the majority of sampled initiatives did not report engagement with political leaders to build support for nutrition programming (only five of 20 did). However, much policy dialogue is not recorded in program documentation so a limitation of the evaluation methodology is that it cannot make judgments about whether Australia has been an effective advocate of nutrition outside Pakistan and Timor-Leste, where interviews were conducted. The review of program documentation for the initiative sample also found that most initiatives have not reported engagement with ongoing funding mechanisms or institutional arrangements to ensure sustainability (only eight of 20 did). However, the Pakistan case study highlights that the achievement of sustainability requires looking at the bigger picture of Australia's country investments.

The Pakistan case study activity was only funded by Australia for one year and could therefore be narrowly defined as unsustainable. However, at the time the funding was approved, planning was already underway by the World Bank for a multi-donor trust fund for nutrition. Given the uncertainty surrounding devolution, Australia decided a one-year initiative would buy time for clarity around devolution, and sustainability would be ensured with the establishment of the multi-donor trust fund. The Multi-Donor Trust Fund for Nutrition managed by the World Bank began in 2014. This large program will incrementally cover all the provinces in Pakistan, and will combine World Bank resources as well as bilateral aid grants provided by several donors including Australia and the United Kingdom's Department for International Development. Australia will fund the implementation of the multi-donor trust fund in Khyber Pakhtunkhwa and Balochistan. The Australian contribution is expected to be \$41 million over four years.

4.4 Initiatives make appropriate use of a twin-track approach

A twin-track approach—highlighted as a key feature of an effective response to undernutrition by many agencies and movements including UNICEF and the SUN framework—involves addressing both immediate and underlying causes of undernutrition at the same time. A twin-track approach can be achieved by combining nutrition-specific and nutrition-sensitive interventions in the one initiative, or coordinating both types of interventions across several initiatives. Nutrition-sensitive initiatives should ideally act as platforms for the delivery of nutrition-specific interventions.

In the sample of 20 initiatives reviewed for the evaluation, 15 were designed to address both immediate and underlying causes of undernutrition. An example of an initiative which uses a twin-track approach is the large new health program in Indonesia, the Primary Health Care Strengthening and Maternal and Newborn Health Program. It includes nutrition-specific interventions which directly improve the nutrition of women, adolescent girls and children aged less than 2 years (e.g. nutrition supplementation), as well as nutrition-sensitive interventions which strengthen the health system (e.g. improving the skills of doctors, midwives and other key health workers). It also works in close coordination with other Australian-funded initiatives in

Indonesia that deliver nutrition-sensitive interventions in social protection, governance, and water, sanitation and hygiene sectors.

In some contexts it may not be appropriate to include nutrition-specific interventions in nutrition-sensitive initiatives. The priority is to ensure that Australian investments in nutrition complement those of partner governments and other donors to achieve a twin-track approach.

4.5 Targeting should be improved

UN agencies and the SUN movement recommend a life-cycle approach to tackling maternal and child undernutrition. Points in the life cycle are identified where there is particular vulnerability to undernutrition: women before and during pregnancy; children from conception to 5 years of age; and adolescent girls (aged 11–19 years) because, if they become pregnant, they are more likely than adult women to give birth to a low-birth-weight baby.

The Australian aid program can better target specific stages of the life cycle. Just over half of the initiatives sampled were targeted at a specific life-cycle stage (11 of 20). The most common life-cycle stages to be targeted were pregnant mothers and young children (seven initiatives) and women of reproductive age and children (three initiatives). Only one initiative described an intervention aimed at adolescents. No initiative targeted adolescents exclusively.

The Pakistan case study activity specifically targeted pregnant and lactating women, and micronutrient supplementation for women (aged 18–24 years). Efforts to reach women had mixed results. About 59 per cent of pregnant and lactating women but only 26 per cent of women aged 18 to 24 years were reached with multi-micronutrient supplementation.⁶⁶ Interviewees emphasised the difficulty of reaching women in the conservative communities of Khyber Pakhtunkhwa and Balochistan. DFAT informant KIP7 stated: *‘Yes, the target [for reaching women, particularly young women] was underachieved but our expectations were maybe even lesser than that ... we recognise this as a significant achievement, whatever has been achieved within the context that this initiative operated in.’*

Non-DFAT informant KIP4 described efforts to overcome the challenges of accessing women: *‘[W]e ensured that [the] Health Department deploys [and aims to recruit] married women [as Lady Health Workers or outreach workers] and ... if some of them are already married to the locals they had an impact ... We created grandmothers’ groups ... and grandfathers’ groups as well, like we have several sessions with the men. We explained to them that it is not something which is against you. It is your own choice, your own children, your own benefit. If you take it is improvement in your own lives. It is not limited to the height, it is the cognitive development as well ... When we engaged with their elders ... with the men as well ... they understood what it [nutrition interventions] is ... We had informal sessions ... rather than having twice a week we said [go] four times a week ... first time having a ... rapport with [the] family.’*

Equity is not well considered in the design and monitoring of sampled initiatives. Only just over half (13 of 20) of the initiatives adequately consider the nutrition of certain vulnerable groups in the design (Table 4.4). Furthermore, while eight of the 20 initiatives disaggregated nutrition data by sex, only one initiative discussed gender disparities in nutritional outcomes. Inequitable intra-household food distribution favouring males—a major determinant of undernutrition particularly in South Asia—was not considered in the design nor addressed in any of the initiatives reviewed. None of the sampled initiatives disaggregated nutrition data along other equity markers such as wealth, ethnicity or rural residence. Children from the poorest 20 per cent of the population are more than twice as likely to be stunted as those from the richest quintile, and children living in rural areas are almost 1.5 times as likely to be stunted as those in urban areas.⁶⁷

Table 4.4 Target populations in design of initiative sample

Targeted group	Number of initiatives (sample size=20)
Ethnic minorities and marginalised groups	1
Girls and women	1
Poor and/or marginalised	4
Affected by conflict or disaster	4
Refugees	2
Not specified	7
Multiple	1

Recommendation 4

DFAT should improve targeting of nutrition interventions to specific life stages, to women and to vulnerable populations. Gender analysis should be used to inform the design and monitoring and evaluation of initiatives, and nutrition data should be disaggregated by a range of equity markers.



Treatment room at Susa Mama health clinic, Port Moresby General Hospital, Papua New Guinea. *Photo by Ness Kerton for DFAT.*

5 Opportunities to improve the effectiveness of investments

5.1 Better monitor and evaluate investments

Assessing nutrition impacts is difficult and can be resource intensive. To understand the contribution a nutrition intervention makes, it is best practice to measure both the outcome of interest, such as stunting, and an intermediate indicator that is specific to the intervention. Outcome indicators measure nutritional status by micronutrient status (clinical signs of deficiency and biochemical analysis) and physical growth (anthropometry). Intermediate indicators are very useful tools to estimate impacts where outcome indicators are difficult to track. For example, dietary diversity is a common intermediate indicator of nutrition interventions in the agriculture sector.

The nutrition-specific initiatives in the sample used indicators that are appropriate to the interventions (this was not assessed for nutrition-sensitive initiatives). Intermediate indicators for measuring the effectiveness of nutrition-specific interventions are well established. Intermediate indicators for measuring nutrition-sensitive interventions are not as well established but should be used. In the Timor-Leste food security initiative (SoL III), an intermediate indicator such as 'knowledge of nutrition' would have been a useful marker of effectiveness for the nutrition education interventions implemented.

The analysis of 20 sampled initiatives found that a broad range of outcome and intermediate indicators were documented (Table 5.1) but the monitoring and evaluation of nutrition initiatives needs to be improved. In their design phase, the majority of initiatives identified indicators that would be used, but less than half actually used these to measure impact. As such, only 10 initiatives collected data that allowed for the evaluation of nutritional impact. The results for these appear to be impressive, with seven initiatives finding a positive impact on child undernutrition. It is important to note, however, that only one initiative used rigorous methods with statistical analysis to determine nutrition impact.

The outcome indicators used in the sample of initiatives were not consistently found to be in line with the most recent recommendations. For example, in one nutrition-specific initiative, wasting prevalence was estimated using the old 1978 National Center for Health Statistics/Centers for Disease Control and Prevention growth reference charts (which is likely to underestimate undernutrition prevalence), instead of the more recent WHO child growth standard which is widely accepted as more appropriate for use in developing country settings.⁶⁸

Where neither outcome nor intermediate indicators are available, input and output level indicators are valuable measures for evaluation. For example, SoL III has a number of indicators of food storage practices and food production diversity that impact on dietary diversity. In situations where it is not possible to collect any primary data, secondary data can be used for initiative evaluation but the time at which these data become available may not line up with the completion of the initiative. In addition, it can be difficult to link data from other sources to outcomes of a specific initiative in a context where many initiatives are operating concurrently.

Table 5.1 Nutrition indicators documented in sampled initiatives

Outcome indicators	Intermediate indicators
Prevalence of wasting	>30 per cent children discharged from selected feeding programs
Prevalence of global acute malnutrition (based on weight and height of children aged 6–59 months for assessing the severity of a humanitarian crisis)	Exclusive breastfeeding to 6 months of age
Prevalence of wasting in children aged 6–59 months	Proportion of postpartum mothers aware of breastfeeding counsellor
Prevalence of stunting	Breastfeeding within the first hour
Prevalence of underweight	Food consumption patterns
Prevalence of low birth weight	Under-5 malnutrition prevalence
Proportion of children with micronutrient deficiency	Proportion of children aged less than 5 years receiving vitamin A supplementation
Prevalence of anaemia	Household dietary diversity score and other dietary intake measures
Mid-upper-arm circumference	Rate of discharge from feeding centre
	Maternal knowledge of feeding practices
	Perceived nutrition level through increased dietary intake
	Maternal malnutrition
	Distribution of iron and vitamin A supplements

In the Pakistan case study activity, collection of baseline and end-line measurements was limited by a short activity life-span (one year) and security concerns. However, a nutrition survey was conducted in the final quarter of the activity, which will serve as a baseline for future initiatives. Non-DFAT informant KIP1 felt that a baseline survey at the start of the activity was not warranted given the volume of recent data available on nutritional status. *‘I was happy to see that the baseline survey was being planned for, but not [for it to be used as] a baseline survey [for this activity] I don’t know really what was in the mind of the planners. Nutrition baseline surveys take time ...’*

Stunting was not consistently used as an indicator across the sampled initiatives. It was used to track initiative outcomes in only five out of 20 initiatives. This may reflect the fact that it has only recently received prominence in the literature for predicting outcomes. Stunting is a better indicator than under-5 wasting prevalence for initiatives that address chronic undernutrition. Indeed, with the causes of stunting being deeply rooted in poverty and deprivation it has been described as the best indicator of longer-term change in overall child health and nutritional status.⁶⁹ It is not, however, an appropriate indicator in shorter-term humanitarian initiatives.

Recommendation 5

DFAT should improve the monitoring and evaluation of nutrition investments by increasing the use of outcome indicators, especially stunting for longer term initiatives. In nutrition-sensitive sectors such as agriculture, for which evidence of the effectiveness of interventions is lacking, DFAT should prioritise nutrition monitoring and evaluation to contribute to the body of evidence of what works.

5.2 Build nutrition capacity of DFAT and counterpart staff

Transfer of knowledge is critical to building capacity. Case study initiatives in Pakistan and Timor-Leste highlighted that knowledge transfer for capacity building is needed: within posts; between posts and advisors; between posts and Canberra; and between posts and partner country governments.

Staff at both Islamabad and Dili Posts identified knowledgeable colleagues at post, and health advisors/nutrition specialists recruited by posts themselves, as useful sources of technical assistance on nutrition. Nutrition specialists at posts helped incorporate learning from the *Lancet* series on nutrition into their work. Four DFAT informants in Timor-Leste (key informant, Timor-Leste 2 [KITL2], KITL9, KITL11 and KITL12) attributed their increased nutrition capacity to the recruitment of a part-time health specialist from December 2011 to June 2013.

Some capacity building has occurred due to transfer of knowledge from Canberra to Islamabad and Dili Posts. However, much of the interest in and capacity building related to nutrition at both posts was ascribed to local efforts. Key informants at Islamabad and Dili Posts noted that the Canberra-based Health Resource Facility was a useful mechanism for providing technical inputs as well as independent technical appraisal of initiative designs. In addition, the Timor-Leste Nutrition Working Group in Dili plays an important role.

Transfer of knowledge back to Canberra, particularly the Canberra-based Nutrition Working Group, was seen by some informants as inadequate, limiting opportunities to learn from good practice. One key informant involved in the Pakistan activity noted: *'The experience that we had ... needs to be shared [with Canberra] ... not just the interventions but the modalities'* (KIP7, DFAT9).

Informants in both Pakistan and Timor-Leste noted that counterparts across all levels of government had low technical capacity for nutrition awareness and programming. Case study informants felt that policy dialogue improved when capacity building targeted government personnel with an existing interest in nutrition. DFAT staff at both case study posts reported having supported counterparts to become champions for nutrition within specific sectors or local government units.

Canberra has begun to pay greater attention to nutrition issues across the aid program, leading to a number of new capacity-building efforts. In particular, the Food Systems Innovation initiative is a partnership between DFAT, the Commonwealth Scientific and Industrial Research Organisation, the Australian Centre for International Agricultural Research and the Australian International Food Security Research Centre. This initiative aims to improve the impact of Australian aid investments in agriculture and food security. One way it does this is by promoting organisational learning and building professional capacity of partners and Australian staff involved in food security programs.

A short case study of how Dili Post built its own capacity in nutrition is presented in Box 5.1.

Box 5.1: Dili Post's increased focus on nutrition

Nutrition situation in Timor-Leste: Timor-Leste has high rates of maternal and child undernutrition. Preliminary data from the 2013 UNICEF Food and Nutrition Survey show that anaemia prevalence almost doubled among women of reproductive age from 2009/10 to 2013 (from 21.3 per cent to 38.9 per cent). Rates of exclusive breastfeeding (66 per cent), minimal dietary diversity (27.5 per cent), and minimal acceptable diet (17.6 per cent) are low. Despite improvements in child nutrition since 2009, the 2013 rates of child stunting and underweight are very high, at 50.2 per cent and 37.7 per cent, respectively.⁷⁰ Rates of child wasting are serious at 11 per cent.⁷¹

Impetus for change: Since late 2012, Dili Post has explicitly increased its response to undernutrition. Interviewees (within and outside DFAT) attributed the increased emphasis on nutrition to the change

in the aid program from mainly humanitarian to longer term development. The change in the aid program coincided with and, according to informant KITL11, was due to critical staff changes at post: *'There's a massive sea-change in this country program when our new minister counsellor came up about two and a half years ago ... So as part of that sea-change we designed our big programs that had this impact on nutrition.'*

A DFAT informant (KITL2) noted the pressure from the then AusAID Director General as part of the 2013 Partnership talks for a much stronger focus in the new country strategy on nutrition: *'... which we were already doing anyway. So it wasn't like he had to beat us up about it but he gave us an extra incentive.'*

Incorporating a nutrition focus: Dili Post's response to this impetus has included commissioning research through existing initiatives, developing an aid program Nutrition Strategy (2013) and a Nutrition-Sensitive Agriculture Strategy (2013), and requiring responses to undernutrition within existing investments to create a portfolio of nutrition-sensitive initiatives.

Building capacity: Key to the development of Dili Post's nutrition capacity was the recruitment of a part-time health specialist from December 2011 to June 2013 and the development of the Timor-Leste Nutrition Working Group. Most of the DFAT informants make reference to the importance of the health specialist to their increased nutrition competency.

KITL11 explains that this capacity building occurred over an extended period of time, allowing the team to build up their understanding of key issues associated with undernutrition: *'We hired a health specialist and she happened to be a nutritionist and she was with us for about 18 months. She spent a long time showing us or teaching us some of the basic building blocks of this stuff. So we took our time, internally, to get our heads around this.'*

Dili Post initiated the Timor-Leste Nutrition Working Group in early 2013, which is made up of staff from Dili Post, the Canberra-based Nutrition Working Group and the Timor-Leste Desk in Canberra. This group has been a forum for building up nutrition work across existing initiatives as described by DFAT informant KITL3: *'The nutrition working group has done a lot of good work ... building a conceptual framework around the work that we're doing and the country strategy that we're developing.'*

The Government of Timor-Leste has recently increased its focus on nutrition. It has endorsed a National Action Plan for a Hunger and Malnutrition Free Timor-Leste (2014), developed a draft National Nutrition Strategy (2014–2019), and a draft National Food and Nutrition Security Policy (2014). Key informants felt that Australia's nutrition work and associated advocacy had played a role in this.

KITL11: *'Then in January this year [2014] the prime minister signed up to the zero hunger campaign and the prime minister also has brought that up two weeks ago in the council of ministers meeting which is sort of like their cabinet, and now there's work on an action plan that's going to be presented.'*

5.3 Develop nutrition strategies

DFAT currently does not have a department-wide nutrition strategy to guide how the aid program will approach nutrition issues. This can reduce the focus on nutrition in countries where child undernutrition is a serious development challenge. It can also make it difficult for Australia or partner countries to start a dialogue on cooperating to address undernutrition. Other donors including the United States and the United Kingdom have nutrition strategies. Canada does not have a stand-alone nutrition strategy but nutrition is a high aid priority that is addressed in a number of other strategies.

DFAT could develop an overarching cross-sectoral nutrition strategy that covers all aid partner countries. This would be the blueprint for country programming in nutrition, ensuring a coherent

and coordinated approach to nutrition, with Canberra taking the lead. At present, Australia's nutrition commitment, as described in the 2014 aid policy, is explicitly linked only to maternal and child health, the prevention and management of non-communicable disease and enhancing global food security. Other sectors relevant to improving nutrition, such as governance, are not described as being vehicles for nutrition programming. Furthermore, Australia's aid policy does not refer to the food utilisation component of food security (the use of food, not just its production, supply and accessibility), which is most relevant to nutrition. Therefore, the aid program would benefit from a cross-sectoral nutrition strategy which fully explicates the links between nutrition and the government's six main aid investment priorities.

Additionally, DFAT posts could develop their own country-specific strategies by incorporating nutrition into their Aid Investment Plans. Posts should make judgments about the most relevant role for Australia given the country context. Evidence from the case studies in Pakistan and Timor-Leste suggest this approach is likely to be fruitful in terms of building the capacity of counterparts and ensuring the sustainability of outcomes from Australia's investments.

According to the 2014 Global Nutrition Report, a high prevalence of overweight and obesity is likely to become a growing problem even in countries where undernutrition is common. Many countries where Australia provides assistance, including Indonesia and Papua New Guinea, already face the double burden of over-nutrition and undernutrition. Working to address both over-nutrition and undernutrition may increase the effectiveness of Australian nutrition investments. DFAT should therefore consider adopting interventions to address over-nutrition in future nutrition investments.

The Australian Government's requirement that all new aid investments engage the private sector is highly relevant to promoting better nutrition. Capabilities that the private sector uses to introduce commercial products and services into the market are also useful for cost-effective and efficient implementation of nutrition-specific interventions (e.g. manufacturing of food fortified with micronutrients; information and communications technology for communication of nutrition messages; marketing insights to promote breastfeeding; and developing tests to detect worm infestations), as well as nutrition-sensitive interventions (e.g. training in sustainable farming; innovation of drought-resistant crops; food manufacturing and packaging practices to reduce waste and loss; and logistics expertise in food distribution to remote areas). Australia is already working with the private sector on nutrition. For example, the G20 AgResults initiative provides economic incentives to smallholder farmers in Nigeria for the adoption of an aflatoxin control technology. Aflatoxin is a carcinogenic substance affecting 60 per cent of Nigeria's maize crops.

Within the SUN movement there is a business network, which was launched at the World Economic Forum in Davos, Switzerland, in 2014. This is the first global forum to invite the private sector to work on addressing undernutrition in collaboration with governments and NGOs. It aims to harness business expertise and apply its strengths and comparative advantages to improve nutrition. Hosted by Business Fights Poverty, members include Unilever, Cargill, BASF and Tetra Laval. An example of Unilever's contribution is its Lifebuoy soap brand, which coordinates with more than 50 organisations in 19 countries to improve hand washing through awareness-raising activities and mass behaviour-change programs. There are currently no Australian member companies of the business network. As part of support for the SUN movement, Australian companies could be encouraged to join the network.

Recommendation 6

DFAT should develop an overarching cross-sectoral nutrition strategy that links nutrition investments with the government's six main aid investment priorities. Posts should incorporate nutrition into their Aid Investment Plans, with Canberra providing guidance on how the principles of best practice can be applied in different country contexts.

Appendix 1 Glossary

Term	Definition
Basic causes of undernutrition	Factors operating at the societal level which place households at risk of exposure to the immediate and underlying causes of undernutrition.
Food security	Physical and economic access to sufficient, safe and nutritious food at all times.
Immediate causes of undernutrition	Factors operating at the individual level that have a direct (or 'immediate') impact.
Initiatives, activities and interventions	Initiatives are financial investments by the Australian aid program with one or more objectives. Initiatives comprise one or more activities to achieve those objectives. Interventions are actions to improve specific outcomes. There may be several interventions under an activity.
Missed opportunity	Initiatives or interventions that have the potential to improve maternal or child nutrition but lack nutrition objectives and indicators.
Nutrition-governance interventions	Interventions that create the enabling political environment for improved nutrition through effective laws and policies, high-quality and well-costed country plans, agreed results frameworks, mutual accountability of partner governments and donors, and increased alignment of approaches.
Nutrition-sensitive interventions	Interventions that address the underlying causes of undernutrition.
Nutrition-specific interventions	Interventions that address the immediate causes of undernutrition.
Stunting	Low height-for-age.
Underlying causes of undernutrition	Factors operating at the household level which have indirect impacts.
Undernourishment	Daily dietary energy consumption less than a predetermined country-specific threshold.
Undernutrition	Consuming too few essential nutrients, or using or excreting them more rapidly than they can be replaced.
Underweight	Low weight-for-age and is a result of stunting, wasting or both.
Wasting	Low weight-for-height or a mid-upper-arm circumference of less than 125 mm.

Appendix 2 Initiatives examined by the evaluation

Table A2.1 Details of undernutrition initiatives examined through document analysis

Initiative name	Description	Country	Nutrition category
Uruzgan Health and Education Program	Multiple	Afghanistan	Nutrition specific
Support to World Food Programme, Bangladesh	Rural Development and Food Security	Bangladesh	Nutrition specific
Fiji Health Sector Support Program 2011–2013	Multiple	Fiji	Nutrition specific
National Program for Community Empowerment PNPM – Generasi: Incentivised Community Block Grant Program	Governance	Indonesia	Nutrition sensitive
Kenya Food Security Community Resilience	Rural development and food security	Kenya	Nutrition sensitive
Basic Education, School Meals and Water and Sanitation Program	Education	Laos PDR	Nutrition sensitive
South Asia Food and Nutrition Security Initiative (SAFANSI)	Health	Multiple	Nutrition governance
Tanzania Maternal and Child Health	Health	Multiple	Nutrition specific
Improving Access to Maternal and Child Healthcare	Health	Myanmar	Nutrition specific
Thai-Myanmar Border Refugee Programs	Emergency, refugee, and humanitarian	Myanmar	Nutrition specific
South Asia Water and Sanitation – Water for Health	Infrastructure	Nepal	Nutrition sensitive
Child Survival and Nutrition Initiative II	Health	Nepal	Nutrition specific
Case study initiative: Pakistan Budget Initiative – Nutrition Initiative – WHO and UNICEF	Health	Pakistan	Nutrition specific
CARE Integrated Community Development Program	Governance	Papua New Guinea	Nutrition sensitive
Philippines Social Protection Initiative	Governance	Philippines	Nutrition sensitive
UN Maternal and Neonatal Mortality Reduction	Health	Philippines	Nutrition sensitive
Australian NGO Cooperation Program Partnership Agreements – Food Security, Nutrition, and Water, Sanitation and Hygiene	Health	Rwanda	Nutrition specific
Solomon Islands Health Sector Support Program– Phase II	Health	Solomon Islands	Nutrition specific
Rural Livelihoods Transition	Rural Development and Food Security	Solomon Islands	Missed opportunity
Early Recovery Food Security Somalia	Rural Development and Food Security	Somalia	Nutrition sensitive
Zimbabwe Food Security – Agricultural Recovery (Transitional Agricultural Inputs Program only)	Rural Development and Food Security	Zimbabwe	Nutrition sensitive
Small Towns Water, Sanitation and Hygiene Program	Infrastructure	Zimbabwe	Missed opportunity

Table A2.2 Details of case study initiatives

Initiative name	Description	Country	Nutrition category
Strengthening Comprehensive Nutrition Interventions for Children and Women in Khyber Pakhtunkhwa and Balochistan	One-year activity (\$7 million), which commenced in 2011, to prevent malnutrition-related morbidity and mortality among children aged less than 5 years and improve the nutritional status of women throughout pregnancy and lactation in nine food-insecure districts of Khyber Pakhtunkhwa and Balochistan.	Pakistan	Nutrition specific
Seeds of Life, Phase III (SoL III), Timor-Leste	Five-year initiative, which commenced in 2011, co-funded by DFAT (\$22 million) and ACIAR (\$3 million) to increase food security in Timor-Leste through increased productivity of new and improved food crop varieties.	Timor-Leste	Nutrition sensitive
Rural Water and Sanitation Program, Phase II (BESIK II), Timor-Leste	Five-year initiative (\$43 million), which commenced in 2011, to support the Government of Timor-Leste goal that the rural population have access to safe, reliable and sustainable water and improved sanitation. The role of the managing contractor (Aurecon) is to assist the translation of agreed plans into action. BESIK II main counterpart ministries are the Ministry of Health and the Ministry of Public Works.	Timor-Leste	Nutrition sensitive
Family Planning and Reproductive Health Services, Timor-Leste	Six-year initiative (\$17.6 million), which commenced in 2009, composed of three activities: Family Planning and Reproductive Health Services delivered by Marie Stopes International, Timor-Leste; Support for Improved Maternal and Newborn Care delivered by Health Alliance International; and Support in Procurement of Family Planning Commodities delivered by UNFPA (ended in 2012). The analysis largely focuses on the first two activities.	Timor-Leste	Nutrition sensitive

Appendix 3 Evidence-based interventions

Table A3.1 Effectiveness of interventions for addressing immediate causes of child undernutrition (specifically for addressing protein-energy undernutrition)

Intervention	Effectiveness
Promotion of early and exclusive breastfeeding in infants: putting the infant to the breast within one hour of birth, breastfeeding exclusively for the first six months of life, and breastfeed until at least 2 years of age.	Strong
Promotion of appropriate complementary feeding in children aged 6–24 months: the introduction of safe, nutritionally adequate foods at age 6 months, along with breast milk.	Strong
Community-based management of severe acute undernutrition (SAM) with ready-to-use therapeutic foods in non-emergency settings: provision of specially manufactured therapeutic foods to children with severe acute undernutrition, but without complications.	Strong
Facility-based management of severe acute undernutrition according to WHO protocol in non-emergency settings: use of the WHO protocol, a comprehensive set of guidelines for health practitioners recommended in cases with complications, for facility-based management of severe acute undernutrition.	Strong
Balanced energy and protein supplements during pregnancy: provision of balanced dietary supplements to women during pregnancy.	Strong
Malaria prevention and treatment during pregnancy in endemic areas to reduce low birth weight: antimalarial medicine given to pregnant women at routine prenatal visits, regardless of whether the recipient is infected with malaria, and the use of insecticide-treated bed nets during pregnancy. ⁷²	Strong
Deworming drugs for infected children: periodic treatment.	Moderate
Prevention or treatment of moderate acute undernutrition in non-emergency settings: optimal use of locally available foods to improve nutritional status or in some situations the use of specially manufactured supplementary foods.	Moderate
Routine preventive zinc supplements in young children: zinc supplementation provided daily or weekly to children aged less than 5 years.	Moderate
Maternal education on infant and young child feeding and child care: provision of education to mothers during or after pregnancy, relating specifically to feeding and care practices for infants and young children.	Moderate; strong when delivered as part of a comprehensive approach
Therapeutic zinc supplements for diarrhoea management: zinc supplementation provided daily during diarrhoea episodes.	Weak; strong for indirect impact by reducing diarrhoea duration
Growth monitoring: routine measurements in children aged less than 5 years to detect abnormal growth, combined with some action when abnormal growth is detected. ⁷³	Weak
Deworming during pregnancy: drug treatment with deworming drugs during pregnancy.	Weak

Note: The interventions were defined as they were in the 2013 *Lancet* series paper 3 and categorised according to the strength of the evidence compiled from the studies and reviews included in the evidence review carried out as part of this evaluation. Effectiveness was determined by the consistency of the observed effect across studies and how direct the association was between intervention and nutrition outcome. **Strong:** Consistent effect across multiple populations with direct associations between intervention and nutrition outcome. **Moderate:** Positive associations between intervention and nutrition outcome observed; however, without consistency across populations. **Weak:** No evidence for a direct association and/or inconsistent effect of intervention on nutrition outcome.

Table A3.2 Effectiveness of interventions for addressing immediate causes of child undernutrition (specifically for addressing micronutrient undernutrition)

Intervention	Effectiveness
Periodic vitamin A supplements in children aged 6 months to 5 years: provision of vitamin A supplements to children aged 6 months–5 years in settings where vitamin A deficiency is a public health problem. ⁷⁴	Strong
Multiple micronutrient supplements for pregnant women: provision of three or more micronutrients as a supplement to women during pregnancy. ⁷⁵	Strong for reducing maternal anaemia and low birth weight
Iodised oil capsules where iodised salt is unavailable: distribution of oral iodised oil capsules in areas with low coverage of iodised salt to pregnant and lactating women, and children aged 7–24 months. ⁷⁶	Strong
Universal salt iodisation: fortification with iodine of all salt used for human and animal consumption for healthy brain development in the foetus and young child.	Strong
Iron fortification of staple foods: addition of selected iron compounds to staple foods such as wheat flour, typically during food processing by the food industry	Strong
Special populations: food preparation of staple foods in ways that retain their thiamin content to address thiamin deficiency (beriberi) in Southeast Asia.	Strong (for populations with low dietary diversity)
Special populations: targeted provision of vitamin A supplements (≤ 3000 $\mu\text{g}/\text{day}$) to HIV-positive women during pregnancy.	Strong (for HIV-positive women only)
Multiple micronutrient supplementation for children: provision of three or more micronutrients as a supplement to children. ⁷⁷	Moderate for reducing anaemia
Iron or iron-folic acid supplements for pregnant women: intermittent or daily supplementation during pregnancy.	Strong for reducing maternal anaemia; moderate for reducing low birth weight
Biofortification of staple foods: the use of conventional breeding techniques and biotechnology to improve the micronutrient quality of staple crops.	Weak; moderate for indirect impact

Note: The interventions were defined as they were in the 2013 *Lancet* series paper 3 and categorised according to the strength of the evidence compiled from the studies and reviews included in the evidence review carried out as part of this evaluation. Effectiveness was determined by the consistency of the observed effect across studies and how direct the association was between intervention and nutrition outcome. **Strong:** Consistent effect across multiple populations with direct associations between intervention and nutrition outcome. **Moderate:** Positive associations between intervention and nutrition outcome observed; however, without consistency across populations. **Weak:** No evidence for a direct association and/or inconsistent effect of intervention on nutrition outcome.

Table A3.3 Common interventions to address underlying causes of child undernutrition

Intervention	Effectiveness
Improved water, sanitation and hygiene practices	While there is a lack of evidence for the direct impact of hygiene interventions on stunting or underweight in children, there is robust evidence that hygiene interventions are effective in reducing diarrhoea and dysentery, which are known to affect child nutrition status.
Access to health services	Increased use of health services through conditional cash transfer programs has been associated with significant reductions in stunting and reductions in child undernutrition. ⁷⁸ However, a systematic review has established that this positive impact is contingent on households being able to access quality care through health services. ⁷⁹
Family planning	Family planning can promote child nutrition through birth spacing and delayed child-bearing. Birth spacing has been found to reduce maternal nutrient depletion and child undernutrition. Delayed child-bearing until at least 20 years of age is also known to reduce child undernutrition because adolescent girls are more likely to give birth to low-birth-weight infants.
Agricultural development	There is evidence that agricultural development may have a positive impact on child nutrition in three principal ways: <ol style="list-style-type: none"> 1. increased agricultural productivity (although impact can be negative where productivity increases are achieved through mono-crop production, nutrition-poor food or increased workloads) 2. increased stability of food production 3. increased control of women over agricultural assets.
Home gardens	Evidence from individual home garden interventions indicates that some interventions can positively affect child nutrition status. Home garden interventions have also been associated with increased access at the household level to greater quantity and quality of food, increased overall diversity of children's diets, and reduced micronutrient deficiencies in children. ⁸⁰
Social protection: seven interventions were reviewed, ranked from strongest to weakest	<p>Social transfers: Evidence indicates that social transfers improve energy and nutrient intake. Importantly, there is some evidence that social transfers have a greater positive impact on child nutrition when they are delivered to women rather than men.⁸¹</p> <p>Conditional cash transfers: These have a positive impact on the use of health services, and nutrition and health outcomes.⁸² They have been found to have an impact on stunting, although this effect is not observed consistently in all evaluated programs.⁸³</p> <p>School feeding programs: This intervention can have small direct impacts⁸⁴ on the nutrition status of participating children and households. However, school feeding programs reach school children too late to reverse any stunting that has already occurred during pregnancy and the first two years of life. The evidence supporting school feeding is for improved school attendance.</p> <p>Public works programs: This intervention can stabilise income in rural households throughout the year thereby reducing undernutrition within participating households.⁸⁵ However, the energy expended performing manual labour is known to reduce the net nutritional impact of the food or cash wages received⁸⁶ which can be compounded by intra-household power dynamics.</p> <p>Food subsidies: Subsidies available to the entire population can increase the consumption of staple foods, but are inefficient in that they tend to benefit richer households more than poorer households.⁸⁷ The alternative approach of providing targeted food subsidies to pre-identified recipients has been found to have a high risk of corruption and leakage of subsidies to the non-poor, as well as high administrative costs.⁸⁸</p> <p>Input subsidies: Although they tend to reduce rural poverty and increase food security at the household and national level, they are very expensive to maintain, disproportionately benefit non-poor producers and can have negative impacts on domestic markets.⁸⁹ Australia's trade policy does not support the use of food and input subsidies—these undermine the food security interests of other countries and can increase the likelihood of excessive food price volatility.</p> <p>Crop and livestock insurance: A recent review found no evidence for the impact of these schemes on nutrition.⁹⁰</p>

Note: The interventions were defined as they were in the 2013 *Lancet* series paper 3 and categorised according to the strength of the evidence compiled from the studies and reviews included in the evidence review carried out as part of this evaluation. The data in the literature on effectiveness of nutrition-sensitive interventions are less complete than for nutrition-specific interventions generally, and for this reason each intervention is followed by a description of effectiveness based on literature rather than ratings for interventions. This is because the causal pathways linking nutrition-sensitive interventions with improvements in nutrition status are complex, with substantial evidence gaps. For example, a major World Bank review identified five causal pathways linking agricultural development to improvements in nutrition status, but found that there was insufficient evidence to clearly explain how these pathways operate, or how they may interact (World Bank, *From agriculture to nutrition: pathways, synergies and outcomes*, World Bank, Washington, DC, 2007).

Table A3.4 Common interventions to address basic causes of child undernutrition

Intervention	Effectiveness
Improved women's education	There is a well-established relationship between educational attainment of women and girls, literacy and child nutrition, although analyses of this relationship can be confounded by income. ⁹¹
Women's increased control over assets	There is a strong body of evidence that interventions that increase women's status and control over assets have positive impacts on child nutrition status. ⁹² Furthermore, there is a broad body of evidence that increasing women's control over resources has a positive effect on family and household welfare, and that this positive effect is particularly strong for child health and nutrition. ⁹³
Strengthened governance and political leadership	There is a well-established link between good governance and child nutrition. ⁹⁴ Analyses show strong national leadership and political will, a multi-sectoral approach with institutionalised linkages between sectors, vertical integration, sustained funding, a plan that connects short- and long-term interventions, and effective accountability mechanisms, including civil society participation, create an enabling environment in which effective action on child undernutrition is more likely. ⁹⁵
Macroeconomic development	While economic growth in itself does not have a substantial impact on child undernutrition, economic growth in the context of macroeconomic policy reform has been associated with rapid improvements in child health and nutrition. ⁹⁶

Note: The interventions were defined as they were in the 2013 *Lancet* series paper 3 and categorised according to the strength of the evidence compiled from the studies and reviews included in the evidence review carried out as part of this evaluation. The data in the literature on effectiveness of nutrition-sensitive interventions are less complete than for nutrition-specific interventions generally, and for this reason each intervention is followed by a description of effectiveness based on literature rather than ratings for interventions.

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