Department for International Development

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An update of 'The Neglected Crisis of Undernutrition: Evidence for Action'

October 2012

Contents

1. Introduction

DFID's paper '***The Neglected Crisis of Undernutrition: Evidence for Action***' (2009) provided a comprehensive literature review on the causes, consequences and potential actions to resolve maternal and child undernutrition. It drew heavily on the findings of the medical journal the Lancet's series on maternal and child undernutrition published in 2008. This paper updates the evidence base on maternal and child undernutrition in the light of new research undertaken since 2009 (outlined in Box 1 below).

Box 1: Methodology overview

This paper is informed by targeted searches of electronic journals and online databases (ScienceDirect, PubMed, the Cochrane library, Oxford journals, The Lancet, the BMJ and Cambridge journals). A search was also conducted for data and reports from the World Bank, UNICEF, the Food and Agriculture Organization (FAO), the World Health Organization (WHO) and other relevant reports or position papers by governmental and non-governmental organisations and international bodies. Where possible this paper draws on systematic reviews, peer-reviewed journal articles, meta-analyses and Randomised Control Trials (RCTs). Some of the new and emerging areas are less well researched and rely on organisational reports pending new research.

A young child being weighed for malnutrition, Turkana, Kenya
Photo credit: Noor Khamis/DFID

2. The scale of undernutrition

Although there has been some improvement in reducing hunger, overall, the rates of undernutrition represented by all three measures (explained in box 2 below) for children under five years of age remains high. Globally, it is estimated that between 870 million – 1 billion people are unable to get enough food to meet energy needs (HLTF, 2009, SOFI 2012). Another one billion people do not get enough vitamins and minerals, which can lead to complications like blindness, or increased chance of death in childbirth. 165 million children under five years of age are chronically undernourished because of long-term exposure to a poor diet and repeated infections. Around 8% of all children are acutely undernourished – or wasted–a life-threatening condition that stemsfrom a dramatic reduction in diet or repeated infections – and not a great improvement from 10% in 1990 (UNICEF, 2012).

It's not all bad news. East Asia, the Pacific, Latin America, the Caribbean and Central and Eastern Europe have made good progress on addressing hunger. But in South Asia, all regions of sub-Saharan Africa (SSA), and the Middle East, progress has been insufficient to meet MDG 1's hunger target by 2015 (UNICEF, 2011). Only 58 countries out of 118 are on track to achieve this. 20 countries have made no progress at all. Most of these are in SSA or South Asia, which is home to 80% of the world's children with stunted growth.

Box 2: Measuring undernutrition

Undernutriton "encompasses stunting, wasting and deficiencies of essential vitamins and minerals (collectively referred to as micronutrients)" (Black *et al.* 2008). Child undernutrition is commonly measured by: i) a child's height relative to the mean for its age (a measure of stunting or **chronic** undernutrition); weight relative to height (a measure of wasting or **acute**undernutrition); and weight relative to the mean for its age (**a composite measure** of stunting and/or wasting).

3. The impact of undernutrition

Undernutrition weakens the immune system, stunts mental and physical growth and development. Effects can be life-long, passed between generations, and can affect how well children do at school and their capacity to earn later in life. So undernutrition affects the economic potential not just of individuals but of whole nations (Black *et al.* 2008, Victoria *et al.* 2008).

Undernutrition is thought to be an underlying cause of around one third of all child deaths (Black *et al.* 2008). This is because nutrition is a contributing risk to other diseases, as outlined in the table 1 below.

Table 1. Contribution of undernutrition to disease burden of under-fives

Disease/Risk factor	Estimated deaths (2010) Number (%)
Total (All causes)	7.6 million (100)
Nutrition (risk factor)	2.66 million (35)
Neo-natal	3.072 million (40)
Lower respiratory infections	1.396 million (18.3)
Diarrhoea	0.801 million (10.5)
Malaria	0.564 million (7.4)

(Source: Liu *et al.* 2012)

Adolescent fertility rates are exceptionally high in some developing countries (Table 2). Adolescent girls are at a much higher risk of maternal mortality (Royston and Armstrong, 1989; Kurz 1997). For example, girls who are under 16 years old face up to four times greater risk of maternal death than women who are over 20 years old (Buvinic, 1998). Poor adolescent nutrition affects final adult body size, resulting in stunting or thinness (WHO, 2005; Haider, 2006). This can lead to intergenerational effects, with thin or stunted women more likely to have babies with low birth weight (WHO, 2005; Kolsteren, 1996). The risk of child mortality is also greatly increased in babies born to adolescent girls (Mangiaterra*et al.* 2008).

Table 2. Adolescent fertility rates for women aged 15-19 years

Country	Births/1,000
Niger	199
DRC	183
Mali	176
Angola	157
Chad	149

(WHO 2010, data for 2007)

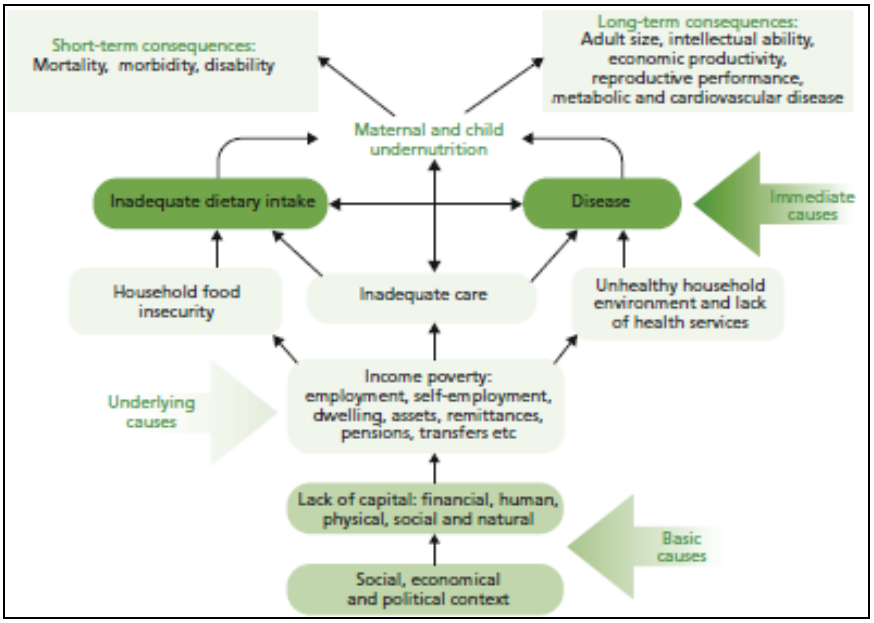
Maternal undernutrition can affect the developing foetus, which in turn will have long lasting negative effects on the health of the child (Thomas *et al.* 2012; Nobili*et al.* 2008). Undernutrition in the womb increases the risk of foetal growth restriction, which in turn increases the risk of mortality. For surviving children, the effects can continue into adulthood. For example, adult Type II diabetes and cardiovascular (heart) diseases have been linked to poor growth in the womb (Barker *et al*. 1993). There is also evidence that iron deficiency in early pregnancy negatively affects a foetus's growth (Rodriguez-Bernal *et al.* 2012). Even if that child grows up to have a good diet, she or he will still be at risk of cardiovascular diseases and type II diabetes (Furuta*et al*. 2012).

- Poor foetal growth or stunting in the first two years of life can lead to irreversible damage, including shorter adult height, lower attained schooling, reduced adult income, and decreased birth weight
- Children who are undernourished in the first two years of life and who put on weight rapidly later in childhood and adolescence are at high risk of chronic diseases.

(Victora*et al*. 2008)

UNICEF's framework, 1990, (Box 3) is useful to show the immediate and underlying causes of undernutrition and the extent of complex linkages between sectors (e.g. health), care practices (e.g. breastfeeding), and structural poverty.

Box 3: Causal framework of malnutrition (adapted from UNICEF 1990, in Lancet 2008)



4. The benefits of scaling up nutrition

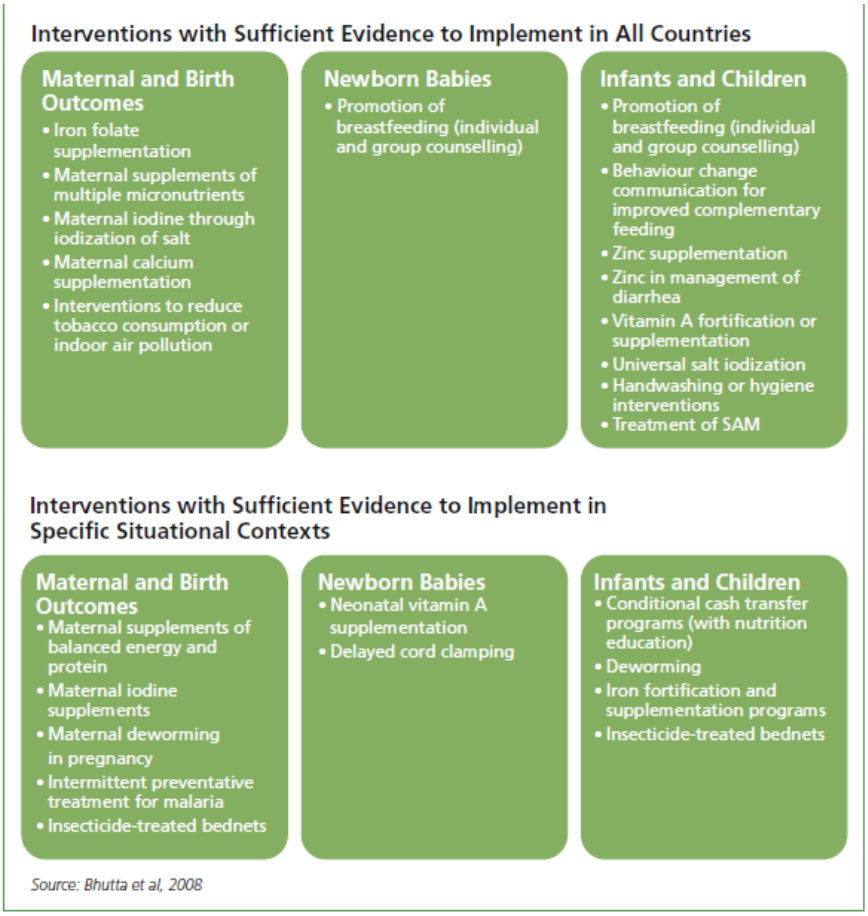
The cost of undernutrition is high. Maternal and child undernutrition accounts for 11% of total global disability-adjusted life years (DALYs), the standard measure of the human burden of deaths and disease (Bhutta*et al.* 2008).

The good news is that we broadly know what to do to reduce undernutrition. The 2008 Lancet series remains the broadest review of the effectiveness of nutrition specific interventions to tackle maternal and child undernutrition. Box 4 and Figure 4 highlight the key messages from the series and the key interventions for which it was deemed there was sufficient evidence to successfully tackle undernutrition and prevent stunting.

Box 4: The Lancet Series – key messages

- Of the available interventions, for which enough data is available to measure impact, **counselling about breastfeeding, fortification or supplementation with vitamin A and zinc, and appropriate management of severe acute malnutrition,** have the greatest potential to reduce the burden of child morbidity and mortality.
- Improvement of complementary feeding through strategies such as counselling about nutrition for food-secure populations and food supplements, cash transfers, or a combination of these in food-insecure populations could substantially reduce stunting and related burden of disease.
- Interventions for maternal nutrition (supplements of iron folate, multiple micronutrients, calcium, and balanced energy and protein) can improve outcomes for maternal health and births, but few have been assessed at sufficient scale.
- Available evidence on growth monitoring (without adequate nutrition counselling and referrals) was insufficient for it to be considered an effective nutrition intervention.
- School feeding was considered an ineffective tool for addressing undernutrition amongst children under five years of age.
- Although available interventions can make a clear difference in the short term, elimination of stunting will also require long-term investments to improve education, economic status, and empowerment of women.

Figure 4. The Lancet 2008 key interventions



And it seems that investing in nutrition represents value for money in comparison with other development interventions. The 2008 Copenhagen Consensus – in which eminent economists weight the value for money of a number of potential development interventions – ranked three nutrition interventions in the top five development solutions. These were Vitamin A and zinc supplements for children, fortification of staple foods, and micronutrient fortification. The 2012 Copenhagen Consensus went on to rank improving nutrition as the top development intervention. Even following conservative assumptions, the benefit to cost ratio was estimated at 15:1 – and using less conservative estimates, this rises to a maximum of 138.6:1 (Copenhagen Consensus, 2012, Hoddinott*et al.* 2012). Citing an earlier study, which attempted to model the costs of scaling up these interventions (Horton *et al.* 2010), the authors note that a $3 billion investment would provide this bundle of interventions to 100 million children (Hoddinott*et al.* 2012). The most effective nutrition interventions focus on the 1,000 day 'window of opportunity' from the start of pregnancy to two years of age because interventions targeted in this timeframe are best able reverse the impact of stunting and cognitive impairment.

As Black *et al* (2008) conclude "Although addressing general deprivation and inequity would result in substantial reductions in undernutrition and should be a global priority, reductions in undernutrition can also be made through programmatic health and nutrition interventions". Nutrition specific and nutrition sensitive interventions focusing on the immediate and underlying causes of undernutrition are the focus of the remainder of this document. This is set within a framework that recognises that wider structural transformations are also needed to tackle the basic causes of undernutrition.

5. A review of the new evidence

Measuring the weight of malnourished children, Madhya Pradesh, India
Photo credit: Nick Cunard, DFID

Maternal and birth outcomes

The following sections highlight a selection of these interventions, updating the evidence where more comprehensive reviews have been published since the Lancet series.

Maternal nutrition is one area in which further evidence has emerged since the Lancet series. A meta-analysis of intervention studies focusing on protein-energy supplementation to pregnant women found that balanced protein-energy supplementation is an effective intervention to reduce the prevalence of low birth weight and small-for-gestational-age births, especially in undernourished women (ImdadandBhutta, 2012).

The World Health Organization (WHO) recommends iron/folate supplements for pregnant women where anaemia is widespread. Iron/folate helps prevent iron-deficiency anaemia, which currently underlies 115,000 maternal deaths per year, and to prevent neural tube defects in developing babies (Sanghvi*et al.* 2010). Iron/folate supplements work by increasing haemoglobin levels (Sanghvi*et al.* 2010). But there is some evidence that iron supplementation from the second trimester of pregnancy (when most supplementation programmes begin) may not be enough to combat existing anaemia. This is because the maternal and foetal risks associated with anaemia are far greater if a woman enters pregnancy with depleted iron stores (Meier*et al.* 2003; Roley, 2003).

There is also a debate as to whether multiple micronutrient (MMN) supplements may be superior to iron/folate. Two reviews on the efficacy of MMN have found beneficial effects on birth-weight compared to iron/folate supplements (Fall *et al*. 2009; Kawai *et al.*2011). A systematic review of randomized controlled trials (RCTs) which compared the effect of MMN with iron and folic acid found that (in a pooled analysis of the 15 trials included) there was an increase in birth weight of 44g. Further, women that received MMN supplements were less likely to deliver babies with low birth weight (14%) or infants who are small for gestational age (15%) (Kawai *et al.* 2011).

Adolescence is a time of rapid growth, but in most developing countries, nutrition initiatives have been focusing on children and women, thus neglecting adolescents. This partly explains the limited evidence available on adolescent nutrition (Haider, 2006). Evaluations of a UNICEF programme operating in 11 Indian states providing iron and folic acid and nutrition education to adolescent girls prior to childbearing showed

significant improvements in haemoglobin levels. In one state the prevalence of anaemia reduced by 20% (Haider, 2006).

New-born babies, infants and children

Breastfeeding support and promotion

The Lancet showed breastfeeding support to be effective in increasing the numbers of women breastfeeding. In turn this has a significant positive effect on child mortality and morbidity (Bhutta*et al.* 2008). Educational strategies during the antenatal period (e.g. breastfeeding education plus essential newborn care) and maternal support are likely to have the greatest impact on early initiation of breastfeeding (Jana 2009). A meta-analysis of studies reporting initiation of breastfeeding within an hour of birth showed that education jointly on newborn care and breastfeeding doubled rates of initiation of breastfeeding (Lassi*et al.* 2010).

A cluster randomised trial found that peer-to-peer breastfeeding counselling can increase Exclusive Breast Feeding (EBF) prevalence in many sub-Saharan African settings (Tylleskär*et al.* 2011). A systematic review found that peer support interventions reduced the risk of not breastfeeding in middle and low income countries by 30% (Jolly *et al.* 2012). The forum through which this counselling is provided has been shown to be important, with a meta-analysis of breastfeeding promotion interventions suggesting that facility based group counselling has a larger effect than individual counselling (Tylleskär*et al.* 2011).

Adequate and timely introduction of complementary feeding

Complementary feeding is an essential intervention after the recommended first six months of exclusive breastfeeding. The Lancet series recommends behaviour change communication to improve complementary feeding – but the evidence on the right package of interventions to realise this requires improvement (Bhutta*et al.* 2008). A systematic review that analysed 42 papers on interventions in 25 developing countries found there is no ‘best package’ for improving complementary feeding. This is because context varies so much according to rates of undernutrition, levels of household food security, and the energy content of local/traditional complementary foods (Dewey and Adu-Afarwuah, 2008).
In general, the beneficial effects for interventions providing complementary foods were found to be greater for trials than for large-scale programmes. This is due to the logistical challenges of ensuring consistent delivery of food (and education) in programmes (Dewey andAdu-Afarwuah, 2008).

Hygiene practices and interventions

A lack of access to clean water, adequate sanitation or a failure to follow basic hygiene practices are a major environmental cause of undernutrition (World Bank, 2006). Diarrhoea, relating to these environmental factors, is a major cause of death and disease, especially in low-income countries. Young children are very vulnerable, bearing 68% of the total diarrhoea disease burden. Among children under five years of age, diarrhoea accounts for 17% of deaths (Clasen*et al.* 2010).

The 2008 Lancet paper considered three reviews and concluded that hygiene interventions were effective in decreasing diarrhoea and dysentery. In particular, hand-washing counselling could reduce the risk of diarrhoea by 30%. A review that included five randomised controlled trials found that interventions promoting hand-washing resulted in a 32% reduction in diarrhoea episodes in children living in communities in low or middle-income countries (Ejemot-Nwadiaro*et al.* 2008). A review of 13 trials involving 33,400 people in six countries provides some evidence that interventions which dispose of excreta safely can prevent diarrhoea. But major differences in the studies, including methodology, the conditions in which they were conducted, and the types of interventions deployed make it difficult to know fully the precise impact sanitation has on diarrhoea (Clasen*et al.* 2010).

There is also a lack of evidence on the impact of hygiene interventions on stunting or underweight. There are no published randomised trials linking access to toilets with improved child growth or even diarrhoea (Humphrey 2009). Work is also needed to look at the role of toilet provision and hand-washing promotion in

preventing tropical enteropathy (an infection of the gut), and in turn, how this affects child growth (Humphrey 2009).

Deworming

Intestinal parasites sometimes cause malnutrition, poor growth, and anaemia in children, and some experts believe they cause poor performance at school. While improved sanitation and hygiene are likely to be helpful, drugs can also be used. In one approach, individuals found to be infected on screening are treated. Evidence from these trials suggests this probably improves weight and may improve haemoglobin values, but the evidence base is small. In another approach, currently recommended by the WHO, and much more extensively investigated, all school children are treated. The latest review of trials in which children have been given antihelminthic treatments (e.g. deworming treatments) suggests that there is no evidence that blanket antihelminthic campaigns have any benefit on child nutritional status, specifically weight or haemoglobin level (a marker of anaemia). However, there is a small amount of evidence that suggests that identifying and treating children with worms improves their weight and haemoglobin levels, according to latest Cochrane review on deworming (Taylor-Robinson DC, *et al.* 2012).

Micronutrient supplementation interventions

Micronutrient supplementation interventions, especially of Vitamin A and zinc, were highlighted as the most cost effective development intervention in the 2008 Copenhagen Consensus. The Lancet showed that Vitamin A supplementation of children 6-59 months resulted in a 24% reduction in mortality (Black *et al*. 2008). A recent systematic review confirmed that Vitamin A supplementation was associated with large reductions in mortality, morbidity, and problems affecting the vision in a range of settings.

Neonatal Vitamin A supplementation was recommended in specific situations based on evidence from Asian populations (Bhutta*et al*. 2008). The more recent review of evidence showed a significant reduction in infant deaths (14%). However due to the small number of trials available for review the authors conclude a delay in any new recommendations until evidence is available from on-going trials (HaiderandBhutta, 2011).

Zinc supplementation was recommended in The Lancet series both as routine supplementation and for the therapeutic treatment of diarrhoea. There is good evidence to show that therapeutic zinc supplementation can reduce the duration of acute diarrhoea by half a day, and persistent diarrhoea by 0.68 days (HaiderandBhutta 2009). However, a 2012 Cochrane Review, concluded that there is insufficient evidence to say whether zinc supplementation during diarrhoea reduces death or hospitalisation (LazzeriniandRonfani 2012).

But the evidence of impact of zinc on reducing stunting is still poor. Recent evidence for routine zinc supplementation to improve (height) growth in young children is weaker, with a meta-analysis of 40 trials reviewed by Bhutta*et al*. concluding that contrary to previous findings, zinc did not significantly improve growth (Ramakrishnan*et al.* 2009).

Fortification (e.g. vitamin enhanced) of staple foods with micronutrients is another of The Lancet interventions rated highly (third) in the 2008 Copenhagen Consensus. With on-going support at the right points in the supply chain, certain fortification strategies can be extremely successful, but are unlikely to be sustainable without long-term support and monitoring (Gómez-Galera*et al.* 2010). Many studies have established the effectiveness of fortification interventions for certain micronutrients through rigorous randomised controlled trials (RCTs). For example, iodised salt has long been recognised as an effective intervention for reducing iodine deficiency – a major cause of goitre and cretinism (Wu, 2002; Yusuf *et al*. 2008). Fortifying staple foods such as flour or cereals with iron has been shown to be effective in increasing haemoglobin levels and reducing the risk of anaemia by up to 63% (Gibson *et al.* 2011; Best *et al*. 2011). Appropriate educational messages on the fortification of staple foods in-country have also been highlighted to improve children's dietary intake at population level (Steyn*et al.* 2008).

Treatment of severe acute malnutrition (SAM)

The development of community management of acute malnutrition (CMAM) programmes has allowed all but the sickest children with severe acute malnutrition (SAM) to be treated in the community. This has reduced child deaths in many countries (Ashworth, 2006). Several studies following The Lancet series have focused particularly on costs and have found CMAM to be a cost effective way to prevent mortality compared to other child health interventions, and in terms of DALY saved, and when compared to traditional inpatient treatments (Tekeste*et al*. 2012; Wilford, Golden and Walker 2011). A systematic review of Ready-to-Use Therapeutic Foods (RUTFs) for home and community care concluded they are both safe and effective in treating severe acute malnutrition, providing a weight gain of three grams per kilo of body weight per day but that there is a need for more research into the efficacy of RUTFs in a non-African context (Gera, 2010).

6. Indirect interventions – nutrition sensitive development

Addressing the underlying causes of undernutrition requires existing development interventions to be more 'nutrition-sensitive'.These might include: social protection to reduce household poverty; agricultural development to improve rural incomes and household food security; women's empowerment; wider health systems strengthening and water and sanitation measures. There is a need for better evidence linking interventions to nutrition outcomes in all these areas. This paper focuses on two in particular which have been extensively reviewed since the publication of The Lancet series – social protection and agriculture.

Social protection

Social protectioncovers arange of policy instruments to address poverty and vulnerability. These include social assistance, social insurance and efforts at social inclusion, subsidies etc. Social protection programmes with food security objectives have different sources of 'entitlement' to food, labour (public works programmes), trade (food price subsidies, grain reserve management), and transfers (school feeding, supplementary feeding, cash transfers).

Cash transfers or Conditional Cash Transfers (CCTs) are direct and predictable non-contributory cash payments that help poor and vulnerable households to even out food consumption and income over the year. While the main aim of cash transfers is to reduce poverty and vulnerability, the evidence shows that they also contribute directly or indirectly to a wider range of development outcomes (Arnold *et al.* 2011; Leroy *et al.* 2009, Manley *et al.* 2012). For example, over time, households may build human capital by investing in their children's nutrition, health and education. A Cochrane review examined 10 papers on CCTs, reported results from six studies that satisfied the inclusion criteria and concluded that overall the evidence suggests that CCTs show a positive impact on the use of health services, nutritional status and health outcomes (Largarde*et al.* 2009). Additionally, a literature review found that cash transfer programmes were effective in increasing food consumption, with households receiving transfers spending more on food. This resulted in significant gains in children's weight and height in several countries (Arnold *et al.* 2011).

Some studies show an increase in height-for-age (Arnold *et al.* 2011) or reduction in the probability of stunting (7%) (Fiszbein andSchady 2009). However, no evidence was found that indicates the initially observed positive impacts of CCT on child height being sustained over time (Fiszbein and Schady 2009).

In Nicaragua, after two years children in households receiving CCTs experienced a reduction in malnutrition 1.7 times greater than the national trend (Fiszbein and Schady 2009). However, other data from Nicaragua indicates CCTs have no impact on the proportion of wasted children aged 0 to five years old (Largarde*et al.* 2009).

A comprehensive review of the literature and data on CCTs found “consistent evidence of a positive impact of CCT programmes on child anthropometry” (Leroy *et al.* 2009). The data showed that these effects had a greater impact on stunting than wasting, and that the largest benefit is seen when the programmes are targeted at younger children, again highlighting the critical first 1,000 days (Leroy *et al.* 2009).

Agriculture

Sowing the seeds of a brighter future, MasiManimba, DRC
Photo credit: Russell Watkins/DFID

- **Household income**– Higher incomes can be used to purchase more food, higher quality food, or a more diverse diet.
- **Changes in agricultural production**– At the farm level, the introduction of new crops as a result of innovations in crop breeding (e.g. biofortified foods) has the potential to improve nutrition. At the level of local, regional, or national food markets, actions by the private sector, governments, or other actors can make existing foods produced within a country available to new markets.
- **Changes in processing**–Can be beneficial, for example, where foods are fortified with micro-nutrients.
- **Changes in agricultural work patterns**– To make work either more or less physically intensive.
- **Labour devoted to agricultural production**– Could lead households to reduce time spent on other income- generating activities, that they make greater use of child labour, or that they reduce time spent on the production of health or nutrition.
- **Changes in the allocation of resources within the household**– If this change results in women earning greater income, then this may affect how households spend money, how food is allocated, and the types of assets that are accumulated.

(Source: Hoddinott, 2011)

The links between agricultural growth and nutrition are multiple and clear – in theory. The ways by which agriculture impacts on health and nutrition are documented in box 5, although the empirical evidence is still weak. Agricultural growth has been shown to have a significant impact on incomes of the rural poor, with cross country modelling revealing a 1% gain in agricultural GDP generating a 6% increase in expenditure amongst the poorest 10% (LigonandSadoulet 2008; Christiansen, Demery, andKuhl, 2011). But improving agricultural income does not necessarily mean that people can/do access nutrient-dense foods, or that all members of the household have access to improved nutrition. Recent cross-country analysis of what constitutes ‘nutrition-sensitive growth’ found that the impact of agricultural growth was greatest in the lowest income countries but that the impact decreases as the levels of calorie consumption rise (Headey, 2011).

For India, which contains a third of the world's malnourished children, this does not appear to hold true, with ongoing research suggesting that there may be multiple disconnects within nutrition, poverty, education and health contributing to this (Headey, 2011).

Where agricultural interventions have attempted to address child nutrition directly, the evidence on what works is poor. A recent systematic review (Masset*et al.* 2012) considered a range of studies of interventions including homestead gardening and the promotion of crops targeted for their nutritional value and biofortification. Of a possible 7,239 studies only 23 met the review criteria and of these, only half had high enough statistical power to detect even a large impact on malnutrition. The studies revealed a mixed range of results on impacts on height and weight measurements (anthropometric indicators), diets, iron and vitamin A absorption. Whilst recognising encouraging evidence amongst the studies the authors are unable to conclude whether agricultural interventions have a positive impact on the nutritional status of children (Masset*et al.* 2012).

Box 6: Nutrition-sensitive growth – Results of cross-country statistical analysis

- General economic growth (in GDP per capita) predicts reductions in stunting, and the effect is reasonably large.
- Increased food production seems to be the most important link between agricultural growth and nutrition, where initial calorie availability is low
- Agricultural growth has significant effect in reducing stunting, but only outside of India, where a third of the world's malnourished children reside.

(Source: Headey, Derek (2011). Turning Economic Growth into Nutrition Sensitive Growth summary available at: http://www.ifpri.org/sites/default/files/publications/2020anhconfbr06.pdf)

7. Progress on implementation, international architecture and the wider ‘enabling environment’ for undernutrition reduction

Global architecture

The last four to five years has seen a number of important changes in the global architecture of organisations and institutions tasked with tackling undernutrition. These are supported by a range of new global targets. In May 2012, Ministers of Health attending the World Health Assembly (WHA) agreed six new global undernutrition targets to be achieved by 2025, including a target to reduce stunting by 40%.

The governments of 30 countries have committed to tackle nutrition under the Scaling Up Nutrition (SUN) movement – a partnership involving developing countries, representatives from civil society, the private sector, research, UN bodies, the World Bank and other donors. The UN Secretary General has appointed a ‘Lead Group’ of heads of state, as well as representatives from donors, civil society and the private sector, to drive the strategic agenda of the SUN movement.The SUN Framework highlights, in particular, country-led action, the need to rapidly scale up the most cost effective actions (as identified by the Lancet series) and a properly funded multisectoral approach drawing on both domestic and global resources. SUN is co-ordinating closely with the High Level Task Force (which is led from the UN Secretary General’s office and brings together the Heads of 22 UN specialised agencies, funds and programmes, Bretton Woods institutions) on the Global Food Security Crisis.

In parallel, the global food crisis has catalysed a number of global events, initiatives and pledges related to food security and nutrition. This includes the World Summit on Food Security in Rome in 2009, where 193 countries signed up to a common approach to tackle food insecurity and hunger; and ongoing developments designed to revitalise the Committee on Food Security and enhance its work as an international and intergovernmental body dealing with food security and nutrition. More recently, G8 countries, African countries and the private sector have committed to a New Alliance for Food Security and Nutrition, which aims to lift 50 million people out of poverty over the next 10 years through inclusive and sustained agricultural growth, reconfirming G8 and African country support to the SUN movement. Other notable initiatives in the international arena include the 1,000 Days Partnership to focus international efforts on the 1,000 day window of opportunity for undernutrition reduction and UN REACH, a consortium of five UN agencies committed to reducing child undernutrition and improving nutrition co-ordination and governance in 15 priority countries.

Opportunities and constraints to scaling up at national and international levels – the enabling environment

A considerable challenge for policy makers and practitioners is to find ways to implement and scale up a range of interventions in a way suited to national contexts, owned by national governments and supported

by civil society and the private sector. As noted by the SUN movement progress report (UN, 2011), these are:

1. Invisibility of nutrition within national development plans
2. Lack of enthusiasm within government for inter-sectoral actions
3. Coordination difficulties that impair the functioning of multi-stakeholder platforms (inflexible vertical programmes, rigid consultative bodies)
4. Insufficient human resources for nutrition sensitive development
5. Lack of capacity to implement nutrition-specific interventions at scale
6. Absence of budget lines for effective implementation
7. Inability to synergise nutrition interventions at local level
8. Shortage of multi-year development assistance financing for nutritional outcomes.

There is still no one answer on why some countries have been so successful in rapidly reducing levels of undernutrition and others have not. Certainly, as shown by India, high levels of undernutrition, especially stunting, can sometimes be unresponsive to economic growth (Headey 2011). The level of inequality in a country matters. Even if overall growth has been good, it does not necessarily benefit the poorest. Country successes point to the need for nutrition being a central part of national and international policy agendas. This has led to a number of studies of nutrition governance (Haddad *et al.* 2012), and nutrition policy processes (e.g. Pelletier *et al.* 2012), which consider the wider 'enabling environment' for undernutrition reduction at national level. These stress the need for intersectoral co-operation between key nutrition sectors or ministries, strong vertical capacity and implementation capability, the need for sustained funding and the role of national leadership and effective champions (Haddad *et al.* 2012, Heaver 2005).

Next steps

Over the coming months, the UK will commission a new in depth paper looking at the relationship between agriculture and nutrition in order to build the evidence base for programmes.

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