

Child Growth=Sustainable Economic Growth: Why we should invest in Nutrition¹

Sustainable and inclusive economic growth is the most powerful driver of development we know. In China, India and Brazil, economic growth has resulted in substantial improvements in wellbeing. We know that many things have to happen to accelerate inclusive and sustainable growth. Macro policies have to keep inflation and interest rates under control. Fiscal policies need to get the balance right between revenue generation and entrepreneurial incentives that generate jobs. Social policies need to maximise opportunity and address deprivation through investments in human capital. Institutions need to support governance that is participatory, responsive and accountable. But what does nutrition have to do with economic growth? A lot.

What do investments in malnutrition reduction have to do with economic growth?

A strong evidence base, mostly generated by economists, now exists to show that eliminating undernutrition in very young children can:

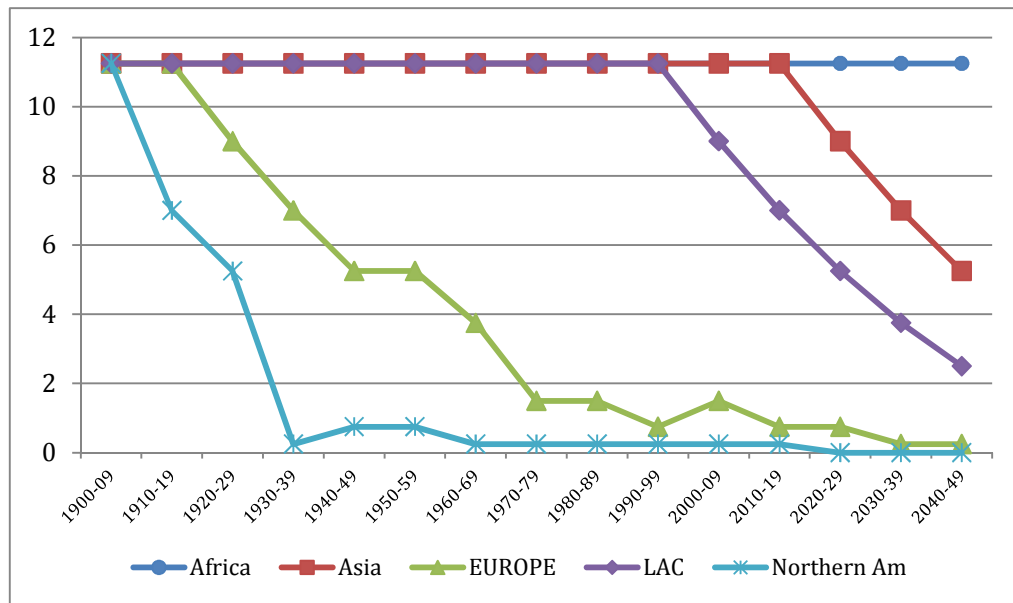
1. Boost GNP by 11% in Africa and Asia	2. Boost GNP even further by supercharging the demographic dividend	3. Prevent more than 1/3 of child deaths per year
4. Reduce burden of disability for children under 4 by more than half	5. Increase school attainment by at least one year	6. Boost wage rates by 5% - 50%
7. Make children 33% more likely to escape poverty as adults	8. Make women 10% more likely to own their own business when they become adults	9. Break the intergenerational cycle of poverty: stunted mothers are 3 times as likely to have malnourished infants

1. Boost GNP

Improved nutrition status leads to better economic growth. Better nourished kids, get sick less often, are in school longer, learn more in school, are more likely to be employed as adults, and are likely to earn higher wages. How does all this add up? Figure 1 shows the estimated GNP losses due to poor nutrition. It is based on the estimated relationship between wages and stature from dozens and dozens of rigorous micro and macro studies. With business as usual the study estimates it will take until 2050 for Africa to realise economic gains from improved nutrition (Asia is projected to reap the nutrition benefit from 2019). This long lag is partly because infants rescued from malnutrition take time to grow into productive adults in the labour force. But it is also because progress in reducing undernutrition has been so slow especially in Africa. Africans have a saying that the best time to plant a tree was 20 years ago and the next best time is today. We need to begin growing tall and strong children today. There is no time to waste.

¹ This policy brief was written by Lawrence Haddad, Director, Institute for Development Studies (IDS) and published in May 2013. See Background Paper by L. Haddad, for further contextualisation of the evidence and full references for the studies drawn on. The brief and background paper were commissioned by the Children's Investment Fund Foundation.

Figure 1: Estimated % of GNP lost due to poor nutrition, 1900-2010, and projections to 2050



2. Supercharge the Demographic Dividend

The countries most affected by undernutrition are also undergoing rapid demographic changes. One key change is that the ratio of the working age to non-working age population is increasing (Figure 2).

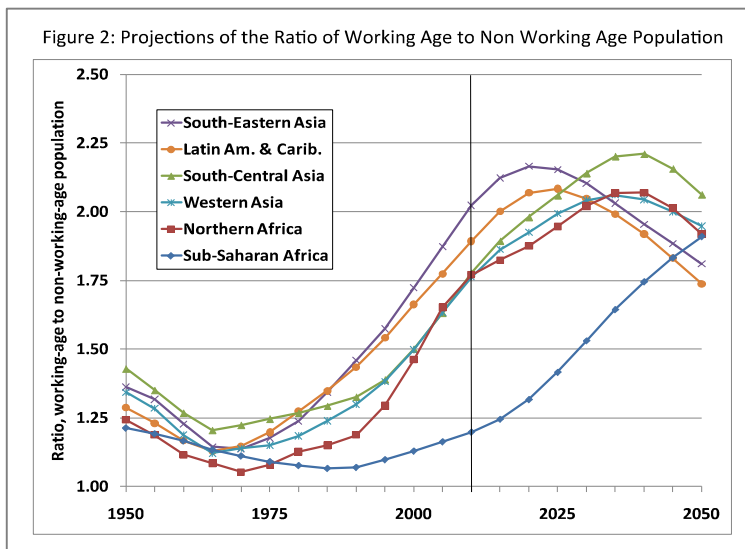


Figure 2: The Potential Demographic Dividend

This increasing ratio has the potential to act as a spur to economic growth. More people are entering the labour force and the number of children they have to support is declining. This potential is called the “demographic dividend”. Most estimates suggest that a demographic dividend would add 1-3% to economic growth rates.

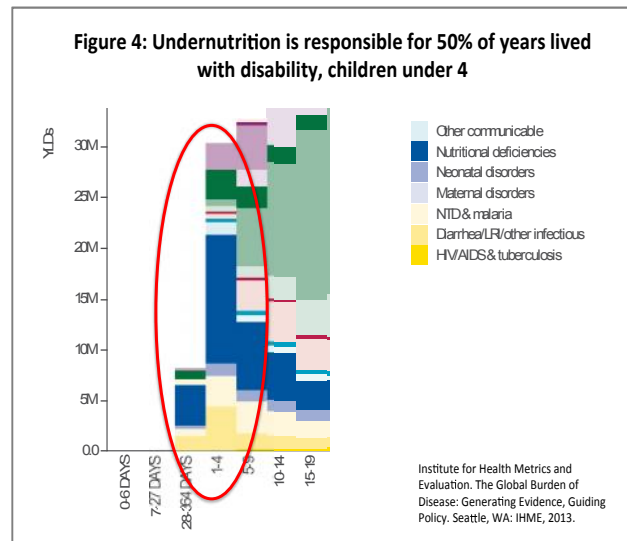
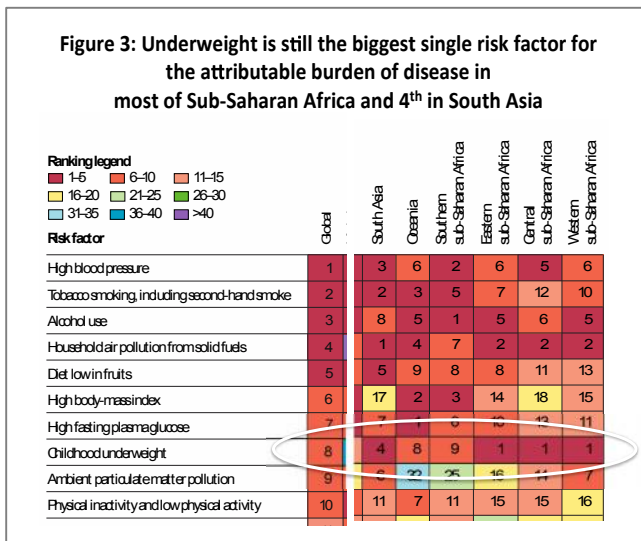
Investments in nutrition can “supercharge” the potential

demographic dividend in two ways: (1) the new labour force entrants will be better equipped to do well in the job market and (2) the number of children they have to support will decline faster—the survival of healthy babies reduces the incentives to have larger families.

3. Prevent deaths and reduce the burden of disease

Undernutrition is about more than economics—it is a human tragedy. Undernutrition is responsible for at least 35% of all child deaths in the developing world. It is also the number one risk factor for the burden of disease in Sub-Saharan Africa (Figure 3). Undernutrition is responsible, globally, for

one half of all years lived with disability for children under the age of 4 (the dark blue column in the left of Figure 4). Lives are lost, potential is wasted, talent is never realised.



Increasingly the first 1000 day window is being seen not just as an opportunity to prevent undernutrition, but also to prevent overweight, obesity and the onset of chronic disease later in life. For example, one effective way to address childhood obesity is to ensure feeding patterns very early in life reduce stunting by promoting height gain.

4. Improve school outcomes

In a set of studies from Brazil, Guatemala, India, the Philippines and South Africa an improvement of one standard deviation in the height of children under the age of 2 results in an increase of 0.5 the highest school grade attained. Other studies from Uganda, Tanzania, Zimbabwe and China find similar losses of 0.5 to one grades in education attainment due to nutrition disadvantages. In Guatemala, children not stunted at 36 months of age attained more than 3 extra grades in school. We know from education studies that an extra year in school leads to increases in lifetime earnings of 20-30%. Even at the lower bound (because there will be better stronger learning even if years in school do not increase) improvements in child growth in the first 2 years of life will boost lifetime earnings by 10% through this education route.

5. Boost employment, wage rates and help to escape poverty

The most rigorous evidence is from Guatemala study and it shows that individuals who were not stunted at 36 months:

- Are 28% more likely to undertake work classified as skilled or white collar
- For men, a one-standard deviation increase in height- for-age at 36 months for boys raises hourly earnings by 20 percent
- For women, a similar increase raises the likelihood that they operate their own business from which they derive an independent source of income by more than 10 percentage points.
- Are one third less likely to live in poor households as adults

In addition, a one-standard-deviation increase in height-for-age of infants raises the per capita consumption level of the household that they live in as adults by nearly 20 percent. An earlier

analysis of the same data finds male wage rates 46% increase for men who received the nutrition supplement as infants.

6. Break the poverty links between generations

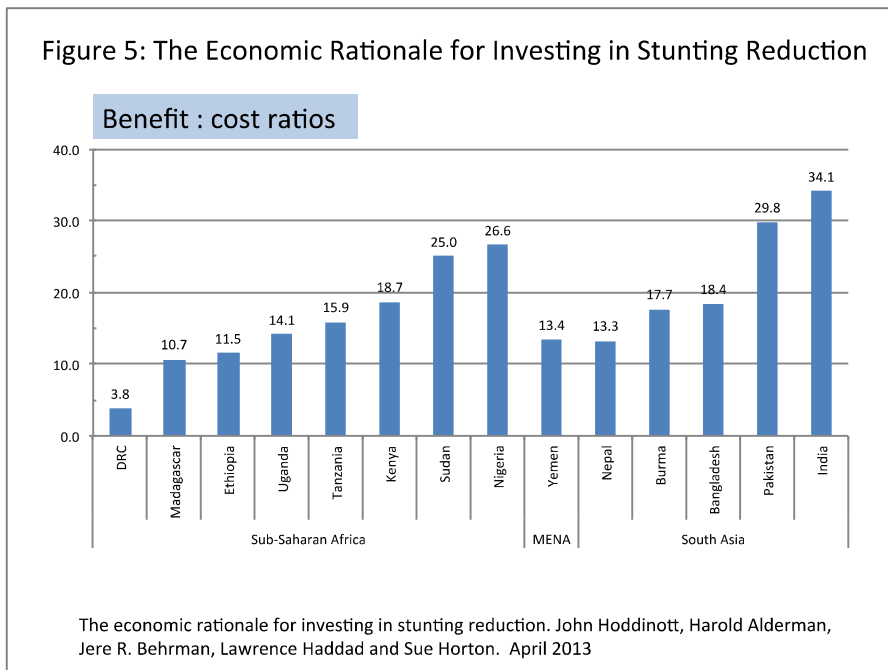
Undernutrition reverberates through lifetimes, but also across generations. Short mothers are 3 times as likely to have children who are stunted by age 2. Short mothers were themselves more likely to be stunted, and so the negative legacy of malnutrition is unwittingly passed down the generations. Ending infant malnutrition breaks the cycle of malnutrition for life -- and for good.

Undernutrition can be Virtually Eliminated in the Next 20 Years

There has been progress in reducing undernutrition, but it has been too slow. Between 1990 and 2011, 21 years, the world cut stunting in children under 5 years old from 40% to 26% (UNICEF 2013). This is about 0.67 percentage points a year. If we can increase this rate of decline by 50% we can get global stunting to under 10%. Double the rate and global stunting is almost eliminated. However, something dramatic will have to happen in Sub Saharan Africa. Here the decline was very slow--from 47% to 40% over the same period—0.33 percentage points a year. At a business as usual rate, sub-Saharan Africa’s stunting rate would only be reduced from 40% to 34% by 2030. If we can double the rate of decline for Africa we can get stunting rates down to 30%. Triple the rate of decline and we can halve stunting in sub Saharan by 2030.

Which Nutrition Investments Will Perform?

For the rates of decline in stunting to accelerate, we need to scale up investments in nutrition.



These investments represent good economics.

As Figure 5 illustrates, the benefit cost ratios (BCR) of investing in proven nutrition interventions are large, ranging from 4-54 with a median of approximately 20. These ratios compare favourably to BCRs from other investments² in: large scale irrigation, with BCRs in the 10-50 range, water and sanitation with BCRs in the range of 2-3, and road infrastructure with BCRs of 11-61.

² See background paper by Lawrence Haddad, IDS

What are the nutrition investment opportunities? There are three broad sets: those investments that have a nutrition as a prime objective, those that have nutrition as one of several objectives, and those that have the *potential* to accelerate nutrition even though nutrition is not an objective.

Investments that have nutrition as a prime objective include (1) the introduction of key nutrients such as vitamin A, Iodine, Calcium, Zinc and Iron into the diet, either through the fortification of widely consumed foods or through supplements, (2) the promotion of breastfeeding as the best and only source of food for a child in the first 6 months of life and then the production of nutritious foods to complement breastfeeding between the ages of 7-24 months, (3) the treatment of the most extreme forms of undernutrition through therapeutic methods and (4) handwashing and other hygiene interventions. From independent rigorous evaluations these interventions have been proven to be effective. If scaled to 90% coverage they would eliminate one quarter of all undernutrition.

Investments that have nutrition as one of several objectives include investments in the area of agriculture, safety nets and water and sanitation that have specific nutrition goals. When targeted to pregnant and lactating women and to children under the age of 2 who are most poorly nourished, these programmes deliver improved nutrition. More investments in these areas are good for nutrition as well as the other objectives such as producing more food and reducing poverty.

Investments with potential to improve nutrition, but no specific nutrition objectives. These include many general agriculture and safety net investments. If they improve nutrition status, they do it inefficiently. Here, investment is not the key constraint to improved performance for nutrition, design is. With the right design features, these investments could complement the impacts of the first two set of interventions on nutrition status.

Improving Nutrition: the Ultimate “Natural Resource Discovery”

In recent years, many countries with high burdens of undernutrition have made significant natural resource discoveries. Often these natural resource discoveries do not easily get transformed into improved development. Without strong institutions, resources can be captured or invested in a short term way: the so called “resource curse”. Norway probably represents the best conversion of natural resources (oil) into GNP. Estimates suggest it took about 10 years after oil began to come online to increase its GNP by 11% over what it would have been without oil. For many other countries it would have taken longer.

This 11% is the same as the economic losses due to current levels of undernutrition (Figure 1). In effect, stunting reductions would be the economic equivalent of a series of massive major natural resource discoveries. They would cost less to discover and would automatically be converted into durable life long investments. There would be no “resource curse” with stunting reductions--quite the opposite.

Countries with high burdens of undernutrition need to speed up their stunting reduction if they want to accelerate economic growth, realise their demographic dividend and experience a massive “human resource discovery”.