POST-2015 CONSENSUS

Post-2015 Development Agenda

Kenya Perspectives

Nutrition

SPEAKERS AND CONTRIBUTORS

John Frederick Hoddinott

John' Hoddinott is H.E Babcock Professor of Food and Nutrition Economics and Policy at Cornel University. His research interests revolve around the intersection of the causes of poverty, food insecurity and undernutrition, and the design and evaluation of interventions that would reduce these. This builds on earlier work on poverty dynamics, intrahousehold resource allocation, schooling, labour markets aid allocation and on improving survey methods. Much of his current work focuses on the effectiveness of social protection programs and on the links between economics and early life nutrition. He has led or participated in the evaluations of some of the largest social protection programs in the developing world, including the Vulnerable Group Development scheme in Bangladesh, Brazil's Bolsa Familia cash transfer program, Ethiopia's Productive Safety net Programme, PROGRESA in Mexico and South Africa's Child Support Grant. John has recently completed a four country study evaluating the impact of food, cash and voucher transfers for the World Food Program and is currently engaged in the analysis of the impact of social protection interventions in Bangladesh and Ethiopia. John is currently a Managing Editor of the Journal of African Economies and an Assistant Editor of Economics and Human Biology.

GAIN

GAIN is an international organization that was launched at the UN in 2002 to tackle the human suffering caused by malnutrition. GAIN is driven by the vision of a world without malnutrition. The Global Alliance for Improved Nutrition (GAIN) is an international organization that was launched at the UN in 2002 to tackle the human suffering caused by malnutrition. GAIN is driven by the vision of a world without malnutrition. They act as a catalyst — building alliances between governments, business and civil society — to find and deliver solutions to the complex problem of malnutrition. Today they are on track to reach over a billion people with improved nutrition – a goal for 2015.

Dr. Joachim Osur

Dr. Joachim Osur is an advocate, a health-care provider and a "reproductive health specialist," in his own words. As a reproductive health practitioner, he has seen firsthand the impact of unsafe abortion on women and their families and communities. His work as a clinician led him to pursue a doctorate in public health with an emphasis on reproductive health and unsafe abortion. His experience in Kenya and other parts of Africa also propelled him into the role of advocate. It's the melding of his experiences and training that keeps him going—talking about unsafe abortion, even in the face of overwhelming opposition. For his work, the Kenya Obstetrical and Gynaecological Society (KOGS) recognized him with a distinguished service award in February.

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Summary: White Paper Report by John Frederick Hoddinott

Children's welfare in Kenya has improved significantly since the turn of the century, but there has been very little progress until recently in reducing chronic undernutrition. A good diet is particularly important in the 'first 1,000 days', from conception to age two when growth potential is highest, there is a great need for nutrients and children are particularly vulnerable to infections.

Chronic undernutrition – lack of a properly balanced diet, rather than just too few calories – leads to poor physical and intellectual development. Children are short for their age, a condition known as stunting. Growth lost in these early days is never fully recovered. Children do less well at school and earn less through their adult lives; on average, a 1% loss in height means a 2.4% reduction in wages.

For under-fives, stunting reaches its peak in children aged 18-23 months, and the rate has fortunately now dropped from 45% to 35%. But rates have fallen faster in rich households than in poor ones, and also vary across the country: the overall stunting rate for under-fives is 25%, but it is 29.8% in Rift Valley and only 17.2% in Nairobi. Despite the improvements, there are still an estimated 1.8 million Kenyan children who are chronically undernourished.

A range of direct nutrition interventions can make a big difference. These include improving the health and nutrition of mothers, community-based nutritional programmes and provision of dietary supplements. The cost is significant, at about $102 per child in Kenya – largely for fortified supplementary foods – but the benefits are far greater.

This package raises incomes by 11.3% on average. For a child who receives the interventions over the first 1,000 days, who starts work aged 21 and works till he is 50, the current value of his additional earnings (discounted at a conservative 5% a year) is $2,342. In other words, a shilling spent on the nutritional package today generates 23 shillings of future income gains. The gains would be greater if people work for longer. Even if they work only to age 35, every shilling spent on better infant nutrition generates 18 shillings in future earnings.

The actual benefits are actually greater than this, because the nutritional package would also reduce the deaths of under-fives by 15%. However, by themselves, these interventions would not eliminate stunting and need to be complemented by specific actions in the areas of social protection, agriculture and gender.

Kenya has a long history of providing social protection. The Hunger Safety Net programme has improved food security, for example, but has not reduced chronic undernutrition. Closer coordination between people working on social protection and nutrition is a promising way to make a difference.

Although Kenya has a thriving agricultural sector and can feed about 90% of its population from domestic production, still about one in three Kenyans are food insecure, particularly in the more arid North East and parts of northern Rift Valley province. Young children also need a wide range of foods, including animal proteins and vitamin-rich vegetables. Less than half of those aged 6-23 months receive an acceptable diet, and the situation is not much better in wealthier households. The farming sector can help by increasing yields and growing a greater range of crops.

Improving the status of women, particularly by improving education, can also help reduce undernutrition in their children. In Kenya, 34% of children whose mothers did not complete primary school are stunted, but this level is halved for mothers who have some secondary schooling.

Kenya is finally making progress in reducing chronic undernutrition. It is right to do more, not just because people's lives are improved but because it also makes economic sense.

In the last 15 years, Kenya made enormous strides in improving children's welfare. The mortality rate for children less than five years of age has fallen from 113 per 1,000 live births in 1998 to 71 in 2013. The percentage of children attending secondary school has nearly doubled over the same period, rising from 39 to 67 percent. But until very recently, Kenya has made little progress in reducing chronic undernutrition in children.

Chronic undernutrition arises when nutrient depletion is so long or so severe that it leads to retardation of linear (skeletal) growth and to loss of, or failure to accumulate muscle mass and fat. It is of especial concern in the first "1000 days" – from conception to age two – a time when growth potential is highest, children's nutrient needs are great but also a time when children are particularly vulnerable to infections which – if frequent or prolonged – inhibit growth. Chronic undernutrition can be detected by measuring children's heights. A child who is chronically undernourished, one who has low height given their age and sex, is considered stunted.

For more than 15 years –from 1993 to 2008-09 - stunting in Kenya remained broadly unchanged, varying between 30 and 35 percent of children younger than five years of age. However, new data released in March 2015 shows that the prevalence of stunting fell to 25 percent in 2014. But, as Table 1 shows, this aggregate improvement masks variation by child age, household wealth and location. There is little change in rates of stunting of children younger than six months of age. After this age, as children transition to the consumption of complementary foods rates of stunting rise, peaking at 45 percent for children 18-23 months in 2008-09 and 35 percent in 2014. Stunting has fallen faster in rich households than in poor households and much faster in some provinces than others – compare Central and Nairobi with Rift Valley. And these aggregate figures mask even larger differences at the county level. Stunting is lowest in Nyeri, with a prevalence of only 15 percent and highest in West Pokot, with a prevalence of 45 percent.

Table 1: Prevalence of stunting by selected child and household characteristics and region, 2008-09 and 2014

	2008-09	2014
By child age		
< 6 months	11.2%	10.0%
18 -23 months	45.7	35.5
By household wealth		
Poorest quintile	44.4%	35.9%
Richest quintile	24.5	13.8
By selected province		
Nairobi	28.5%	17.2%
Central	32.4	18.4

Rift Valley	35.7	29.8

Source: Based on DHS data.

While these improvements are impressive, a 25 percent prevalence of stunting is unacceptably high. There are an estimated 1.8 million children in Kenya who are chronically undernourished. Redressing this is both intrinsically and instrumentally valuable. It is intrinsically valuable because all children have the right to grow up healthy and well-nourished. It is instrumentally valuable because the effects of stunting persist into adulthood. These arise because stunting has long term physical and neurological consequences.

Growth lost during the "1000 days" is never fully recovered. In developing countries, shorter individuals earn less, a useful rule of thumb being that a one percent loss of height reduces wages by 2.4 percent. More pernicious still are the neurological effects that lead to cognitive impairments. Chronic undernutrition damages children's brains with adverse consequences for functions such as attention, memory, learning and the development of motor skills. Chronically undernourished children attain less schooling and do poorer on tests of vocabulary and non-verbal cognitive ability. Because schooling increases economic productivity, individuals who are chronically undernourished in early life have lower income and consumption levels in adulthood. These impacts on stature and cognition mean that children who are chronically undernourished in Kenya face a future of lower wages and income.

One study, from Guatemala, followed children from birth until they were as much as 40 years old. Children who were chronically undernourished lived in households that were poorer, partly because they earned lower wages and partly because they were less likely to marry better educated partners - children who were better nourished in early life had better prospects when they entered the marriage market.

Lastly, taller mothers will have taller children so that benefits from reducing chronic undernutrition are transmitted from one generation to the next.

So what should Kenya do?

An excellent starting point are *direct nutrition interventions*. Rigorous evidence to support the large-scale implementation of the following interventions that address chronic undernutrition, severe acute undernutrition and micronutrient deficiencies:

- Interventions that improve the health and nutrition of mothers: universal salt iodization; micronutrient supplementation; and calcium supplementation.
- Interventions aimed at improving care behaviors: community-based nutritional programs that provide information on breastfeeding and complementary feeding.
- Interventions that address health-related causes of undernutrition: therapeutic zinc supplementation and Vitamin A supplementation given its impacts on reducing mortality in children six to 59 months (although there is limited evidence on a link to stunting reduction).
- Interventions that improve the quantity and quality of a child's diet: community-based management of severe acute malnutrition and limited use of fortified supplementary foods.

This package of interventions is not cheap – fully implemented it costs around $102 per child in Kenya with much of the expense coming from the provision of fortified supplementary foods. But remember that cost is only one part of the story.

On average, implementing this package of direct nutrition interventions raises incomes by 11.3 percent. Mindful of this, consider a Kenyan child born in 2015, benefitting from this package during conception and infancy and joining the work force at age 21. Assume that over his lifetime, he will earn the average per capita income of a Kenyan. Using current income figures and growth projections, we can calculate their expected income from the date they start working, 2036, to different dates in the future. These are *future* income gains that result from investments made *today*. To compare costs incurred today with these future benefits, we calculate the present value of these future income gains. If we assume that this person works until they are 50 years old and using a conservative five percent rate (to take account of the time value of money), switching this child from stunted to not stunted increases the present value of their lifetime income by $2,342. Put another way, every dollar or shilling spent on direct nutrition interventions today generates 23 dollars or 23 shillings in future income gains.

Table 2 shows these income calculations for different numbers of working years and different discount rates. If we assume individuals work longer, or we discount future earnings by a smaller percentage, the present value of these monetary benefits gets larger. If we express these income gains (the benefits of direct nutrition interventions) and costs as a ratio – the benefit: cost ratio – and assuming this individual works until they are 60, with a three percent discount rate, every Kenyan Shilling spent on direct nutrition interventions generates 75 Shillings in benefits. These benefit: cost ratios are smaller if we assume that individuals work for a shorter period of time and if we assume a higher discount rate (so assuming that people only work until they are 35 and a five percent discount rate, we get the widely cited benefit: cost ratio of 18); conversely they are larger if we assume longer working lives and lower discount rates. And there are other benefits from reductions in stunting not captured in these calculations. Fully implementing this package of direct nutrition interventions would reduce deaths by children under five by 15 percent.

Table 2: Economic returns and benefit: cost ratios of direct nutrition interventions in Kenya

	Benefits to age 35		Benefits to age 50		Benefits to age 60	
	3% discount rate	5% discount rate	3% discount rate	5% discount rate	3% discount rate	5% discount rate
Present value of increased income from reduction in stunting	3070	1563	6138	2342	7662	2414
Benefit: cost ratio	30.0	15.2	60.0	22.9	74.9	23.6

Source: Horton and Hoddinott (2014).

While these direct nutrition interventions will make a significant dent in chronic undernutrition in Kenya, by themselves they will not eliminate stunting. These direct actions need to be complemented by increased use of nutrition sensitive interventions, especially in social protection, agriculture and gender.

Kenya has a long history of providing social protection and social safety net programmes to its citizens. Several evaluations of specific interventions, such as the Hunger Safety Net Programme, have shown that these can improve household food security. But by themselves, these social safety nets do not appear to lead to reductions in chronic undernutrition either in Kenya or in most other

developing countries. There is promising evidence from other developing countries suggesting that linking these with direct nutrition interventions – such as behavior change communication – can reduce stunting. But implementing these linkages will require much closer coordination between those working in the social protection space and those working in nutrition.

Kenya produces a rich variety of agricultural goods and can feed approximately 90 percent of its own population from its own agricultural production. But several factors constrain its ability to use this production to reduce chronic undernutrition. First, access to food differs considerably within Kenya both by location and by wealth with food insecurity a particular concern in the arid and semi-arid lands found in the North-East as well as parts of northern Rift Valley province. Approximately one Kenyan in three is food insecure. Second, very young children need access to a diverse set of foods, not just staples such as maize, but also animal source proteins and vitamin-rich vegetables. The 2008-09 DHS (which provides the most recent nationally representative evidence on infant and young child feeding practices) shows that only 24 percent of Kenyan children 6-23 months consume animal source foods and only 44 percent consume a minimally acceptable diet. Even among wealthier households and those with better educated mothers, the percentage of children with a minimally acceptable diet is less than 60 percent. In turn, this suggests that nutrition sensitive agriculture in Kenya requires increases in yields (to improve food availability) together with interventions that emphasize diversifying agricultural production to include a broader range of foods and increased emphasis on the consumption by young children of more diversified diets are all needed if the agricultural sector is to play a much larger role in reducing stunting.

Finally, improving the status of women can continue to help drive reductions in chronic undernutrition. An important component to this is improving education attainments. While girls' primary school enrollment is impressively high, many girls do not attend secondary school. In Kenya, the prevalence of stunting in children whose mothers have incomplete primary schooling is 34 percent; this prevalence is halved (ie 17 percent) when mothers have some secondary schooling. Greater maternal education improves children's nutritional status through myriad pathways including increased empowerment, higher income generating potential and enhanced ability to understand and act on messaging aimed at improving child care practices.

Kenya has finally begun to make progress in reducing chronic undernutrition. But it can and should do more. Not only is this the right thing to do, it makes economic sense. Investments to reduce chronic undernutrition have high economic payoffs which contribute to long term poverty reduction. A country where children are no longer undernourished is a country with a bright future.

For further reading

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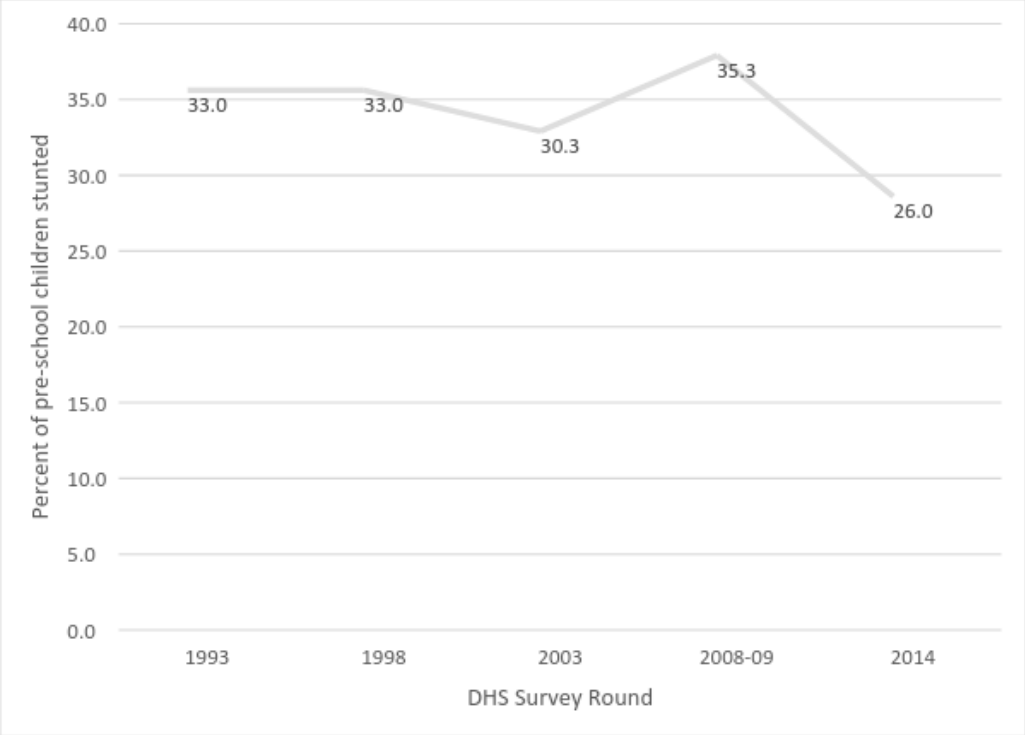
Figure 1: Prevalence of preschool stunting by year, Kenya



Source: Based on DHS data.





Nutrition Policy & Programming Kenya

gain
Global Alliance for Improved Nutrition





www.gainhealth.org

GUIDING LEGAL COMMITMENT & DEVELOPMENT PRINCIPLES

The Constitution of Kenya 2010

43 (1) (C) Every person has the right to be free from hunger and to have adequate food of acceptable quality

53(1) (C) Every child has the right to basic nutrition ,shelter and health care

Vision 2030

“ To transform Kenya into a highly competitive country with a high quality of life”

GUIDING LEGAL COMMITMENT & DEVELOPMENT PRINCIPLES

National Food and Nutrition Security Policy

- All Kenyans, throughout their life-cycle enjoy at all times safe food in sufficient quantity and quality to satisfy their nutritional needs for optimal health

- Micronutrient deficiencies to be addressed by promoting more diversified diets, food fortification, bio-fortification and vitamin and mineral supplementation

Millennium Development Goals

MDG 1-Reduction in poverty and hunger

MDG 4-Reduction in infant mortality

MDG 5-Improved maternal health

Scaling Up of Nutrition (SUN) movement

The SUN Movement looks to implement both specific nutrition interventions and nutrition-sensitive approaches


Proven High Impact Interventions to reverse nutrition trends and child mortality

PROPOSED NUTRITION SPECIFIC INTERVENTIONS IN NNAP 2012-2017

Promotion of Good Practices

- Breast feeding
- Complementary feeding
- Hand washing

Increasing Intake of vitamins & minerals

- VAS
- Zinc supplementation
- Multiple-micronutrients
- De-worming for children
- Iron-folic for pregnant mothers
- Iodized oil capsule

Provision of micronutrient through food fortification

- Salt Iodization
- Iron fortification of staple foods

Therapeutic feeding for severely malnourished children

- Prevention or treatment for moderate under nutrition
- Treatment of severe acute malnutrition

PROPOSED NUTRITION SENSITIVE INTERVENTIONS IN NNAP 2012-2017

Agriculture: Making nutritious food more accessible to everyone

Clean Water and Sanitation: Improving access in order to reduce infection and disease

Education and Employment: Making sure children have the energy that they need to learn and earn sufficient income as adults

Health Care: Improving access to services to ensure that women and children stay healthy

Support for Resilience: Establishing a stronger, healthier population and sustained prosperity to better endure emergencies and conflicts

Women Empowerment

ESTIMATED IMPACT OF INTERVENTIONS

- Reduction of child mortality by 30% if implemented fully and at scale
  - EBF → 13% death prevented
  - CF → 6% death prevented
  - Zinc → 5% death prevented
  - VAS → 2% death prevented
- Potential increase of GDP of 2-3%

FROM MDGS TO SDGS
SUSTAINABLE DEVELOPMENT GOALS???

Goal 1	End poverty in all its forms everywhere
Goal 2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture
Goal 3	Ensure healthy lives and promote well-being for all at all ages


GAIN IN KENYA

PROGRAMS IN KENYA

1. Program: Ag-Nutrition
2. Program: MIYCN
3. Program: Food Fortification


Thank You

NUTRITION AND DEVELOPMENT

Dr Joachim Osur

NUTRITION

- Triple tragedy:
  - Acute under-nutrition
    - Kwashiokor, marasmic kwashiokor
  - Chronic under-nutrition
    - Leads to marasmus - wasting and stunting
  - Over-nutrition
    - Overweight and obesity

Under-Nutrition

- **Two types:**
  - Protein/energy deficiency resulting in individual being underweight and suffering greater ill-health
  - Micronutrient deficiency
- One in nine people on earth do not have enough nutritious food to lead a healthy life and reach their potential.

Acute Under-nutrition

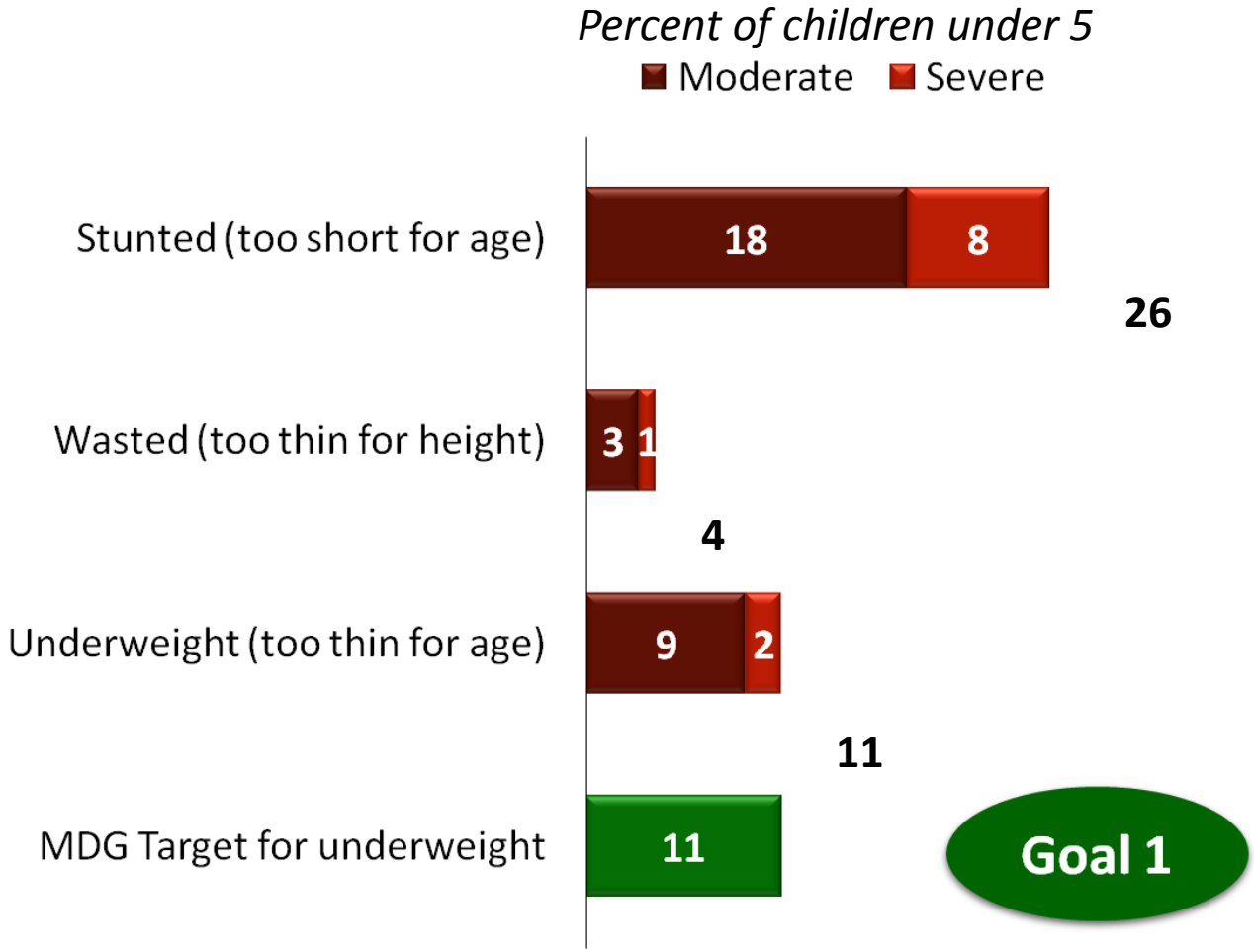
- Affects children under 5, pregnant and lactating women, the sick
- Risk of death quite high
- A problem of people in developing countries
- 52 million children affected – one in every 12 of children under 5 years, from SS Africa and South Asia

Signs of kwashiorkor

4.

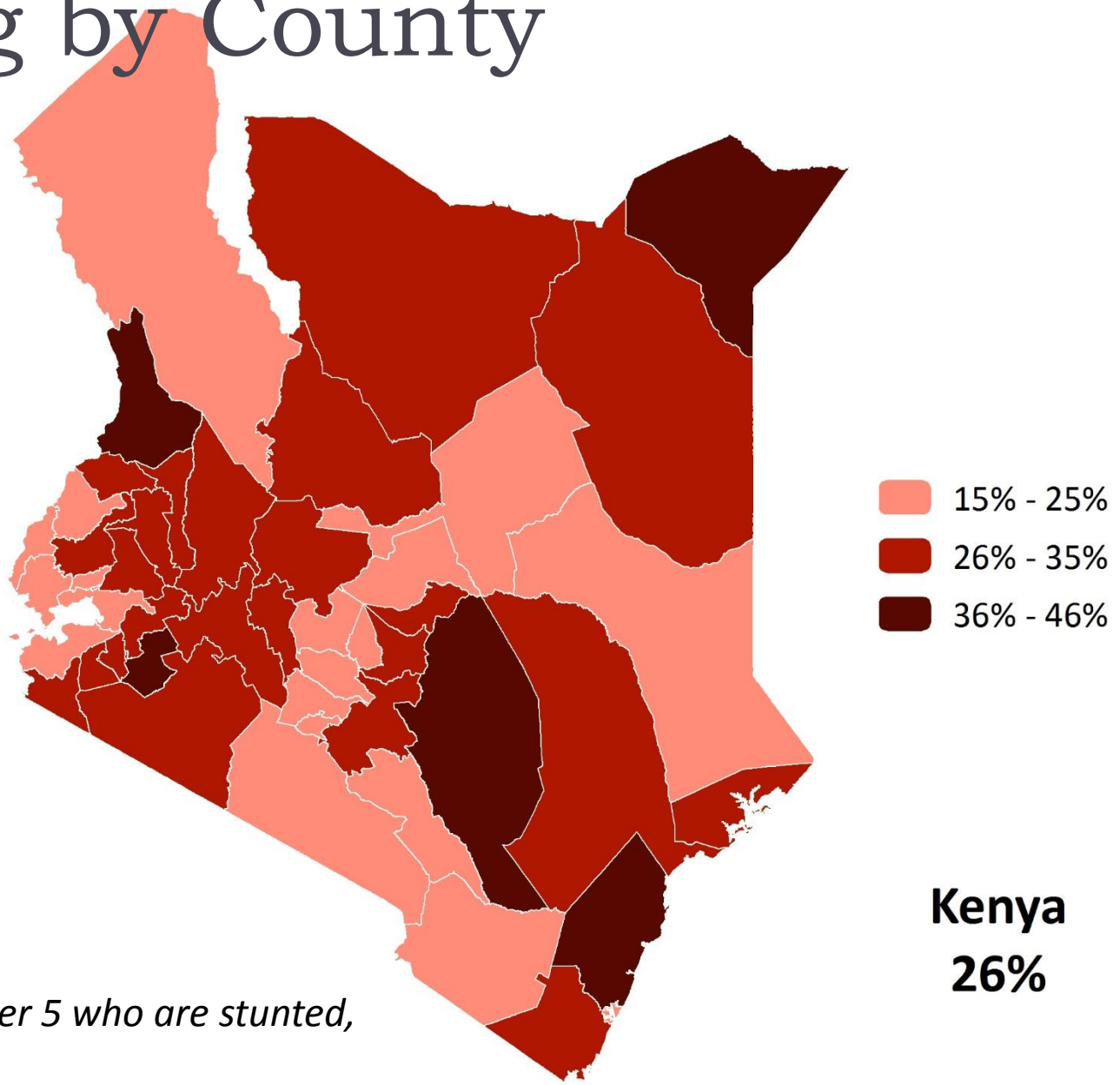
5.

Nutritional Status of Children



*Based on the 2006 WHO Child Growth Standards

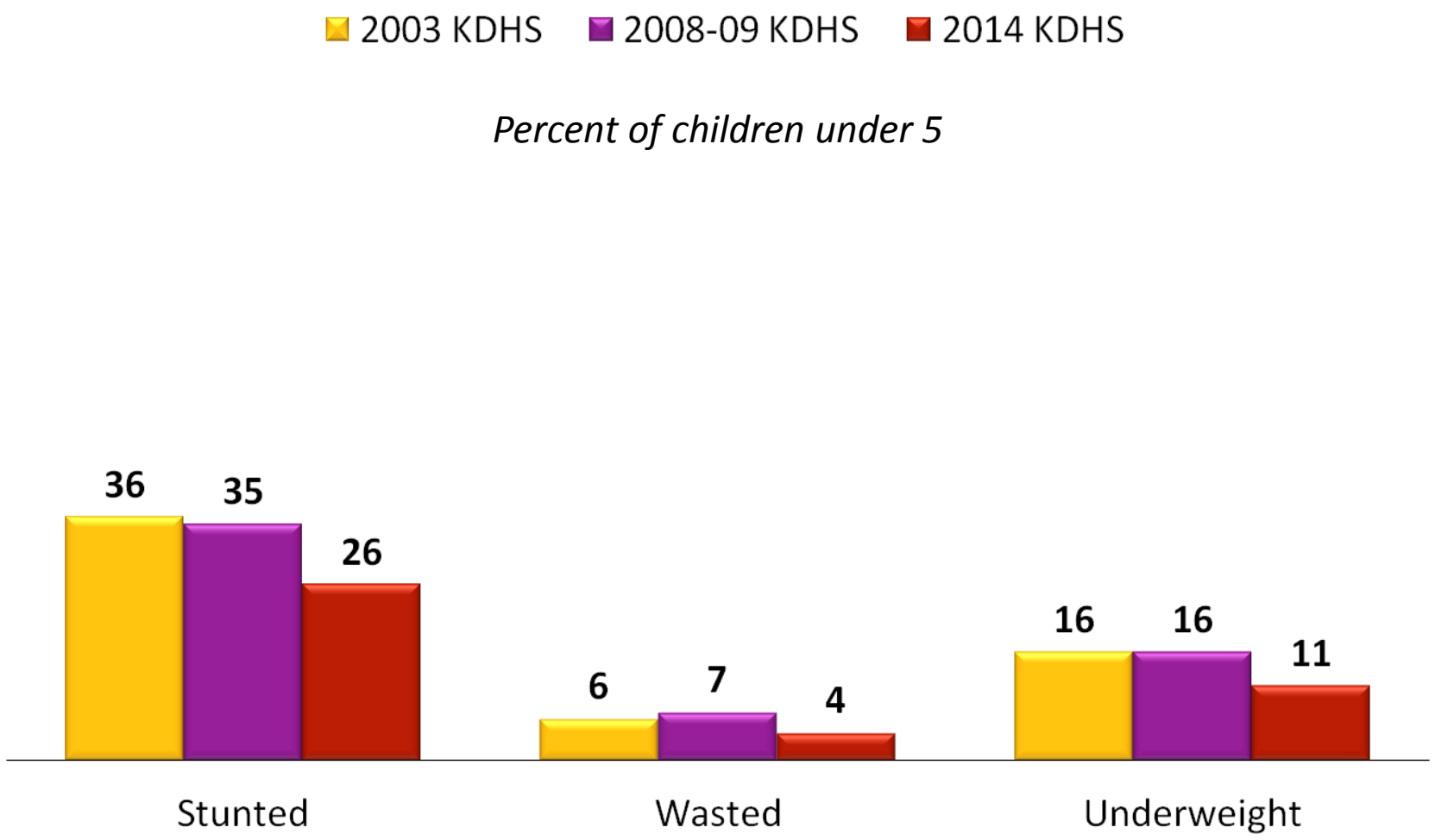
Stunting by County



Kenya
26%

Percent of children under 5 who are stunted, or too short for age

Trends in Nutritional Status of Children

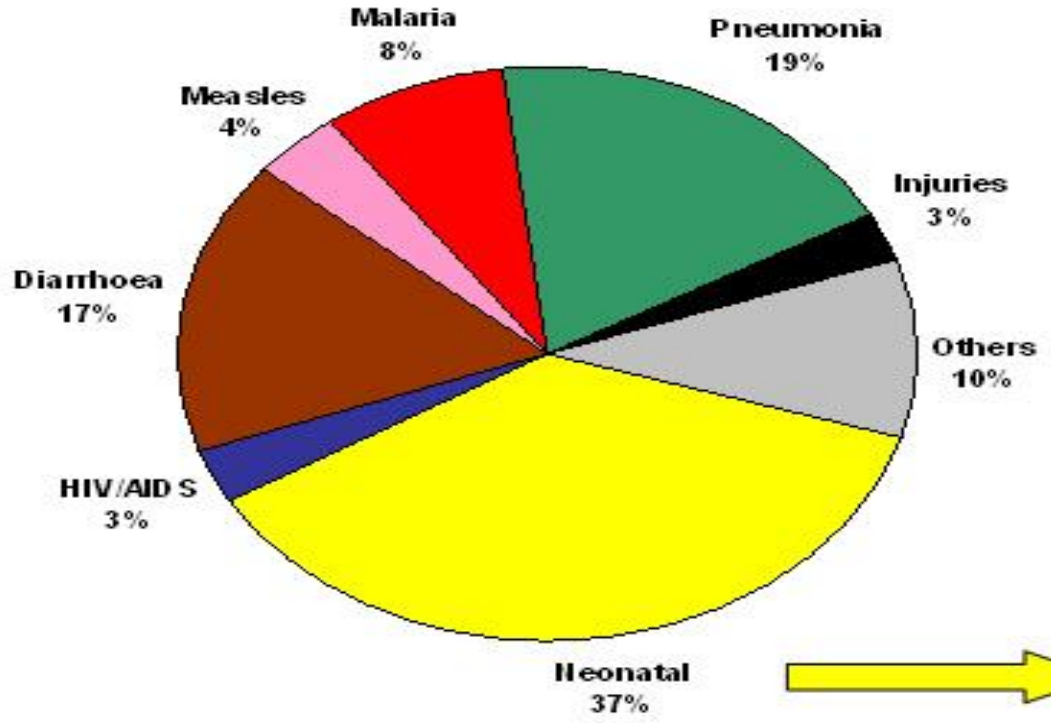


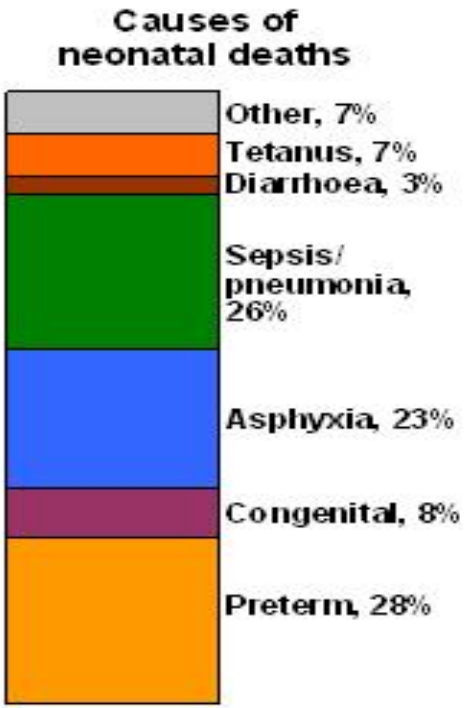
*Based on the 2006 WHO Child Growth Standards

Impact of Under-Nutrition

- Costs the global economy US$3.5 trillion annually–that's 11% of the world GDP
- Developing countries most affected
- The global cost of lost economic productivity due to micronutrient deficiencies is $2 trillion per year

Major causes of death among children under 5 years of age and neonates in the world, 2000-2003





Undernutrition is an underlying cause of 53% of deaths among children under five years of age.

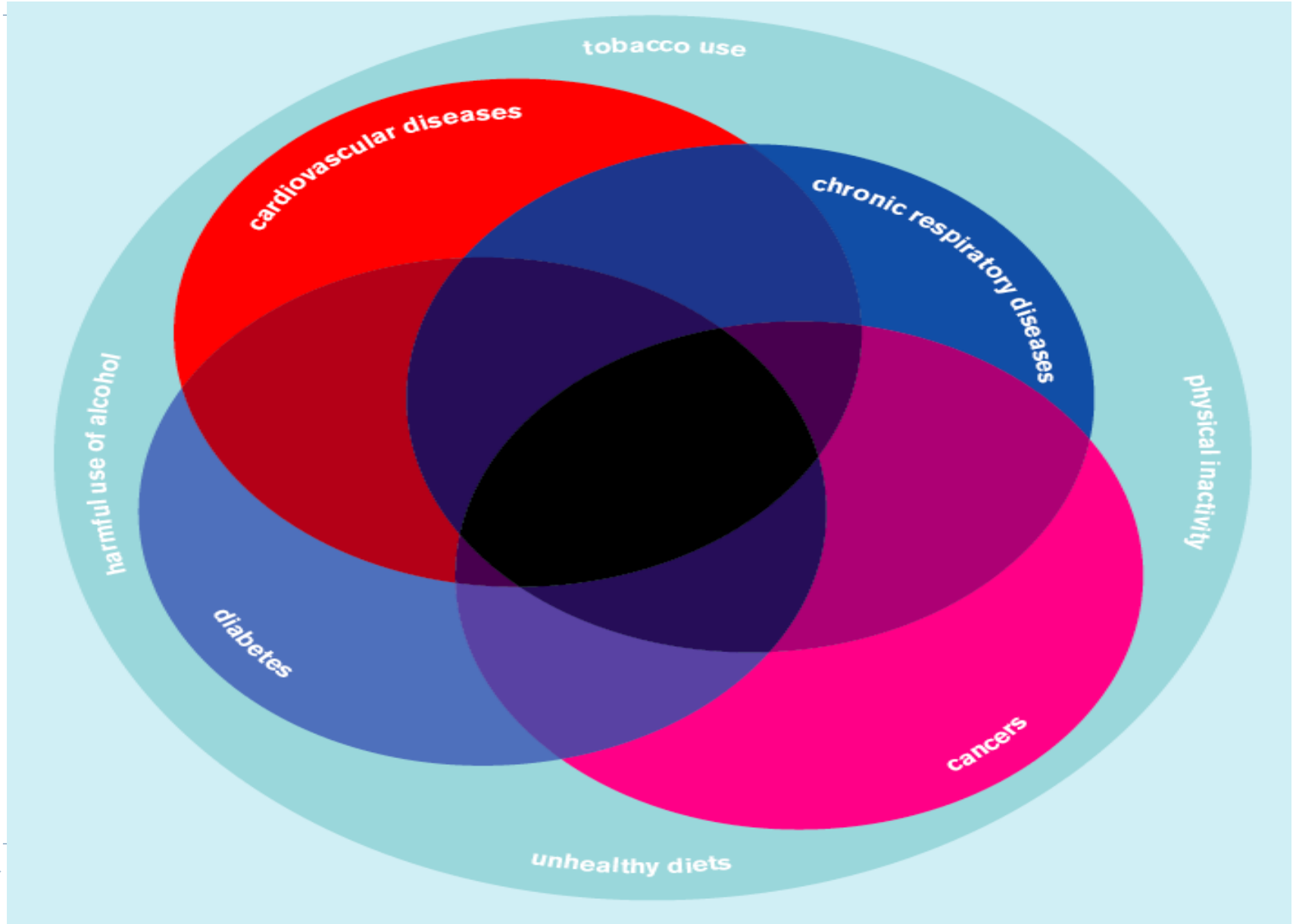
Impact of Under-Nutrition

- Stunted women:
  - Cannot deliver normally – need C/S, otherwise may die in labour, end up with fistula, dead babies or babies with cerebral palsy
- Women who are under-nourished at the time of conception:
  - Have a worsening nutritional status during pregnancy due to additional demands of the growing baby
  - Fail to gain sufficient weight during pregnancy and have a higher risk of dying

Impact of Under-Nutrition

- For the fetus:
  - Under nutrition affects formation and growth
  - have life long effects, e.g. diabetes is commoner in adults who were born of malnourished mothers
- Micronutrient deficiency has multiple effects on mother and fetus, e.g.
  - Iron deficiency in pregnancy – anaemia and risk of death from even trivial bleeding; preterm birth
  - Folate deficiency – fetal development of nervous system affected
  - Calcium deficiency – bone development

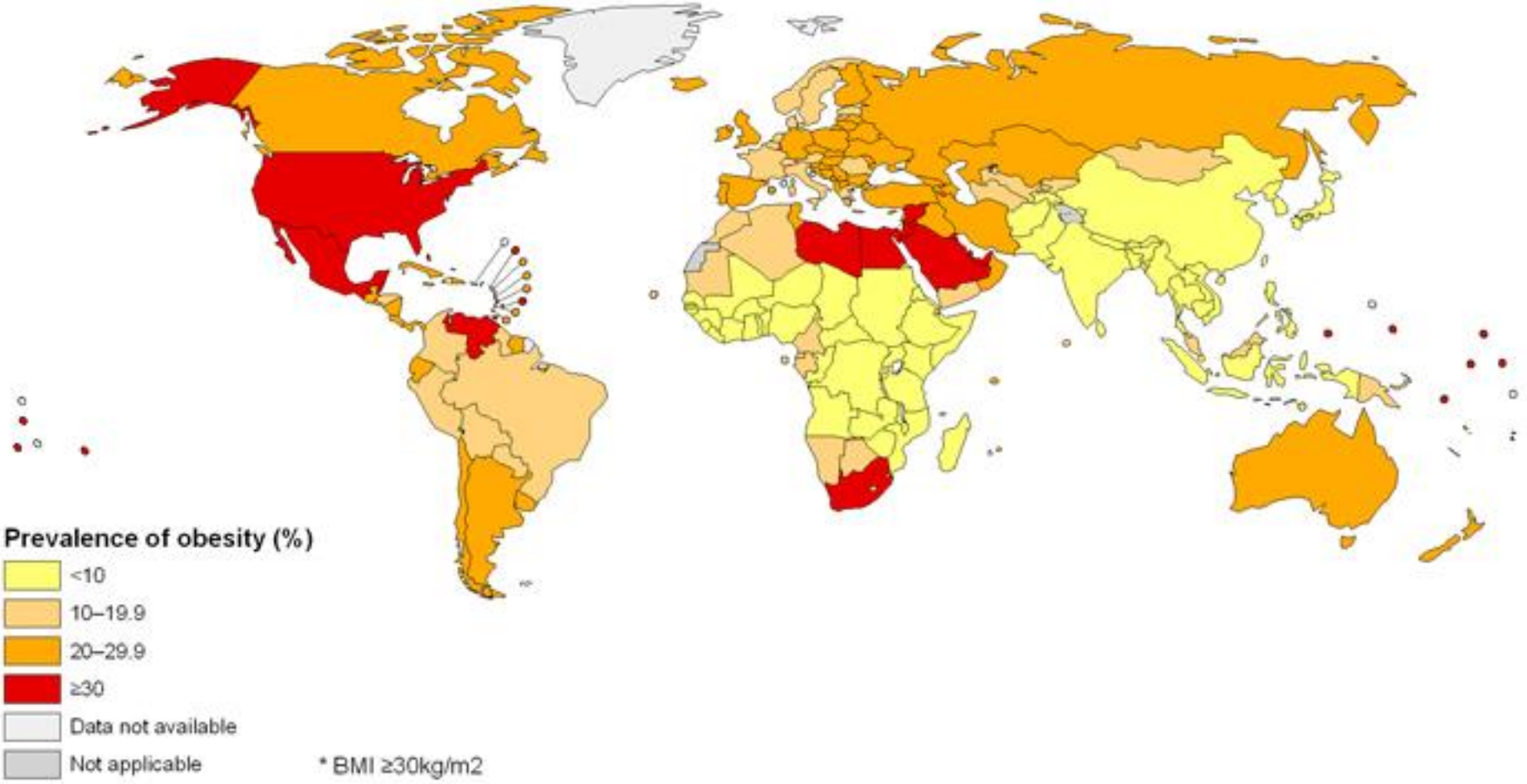
When you have exhausted all possibilities, Remember this...you haven't



Trends in Obesity

- Worldwide, 30% of women and 40% of men are overweight and 27% of women and 24% of men are obese
- Over 22 million children under the age of 5 years are overweight throughout the world
- More than 75% of overweight and obese children live in low- and middle-income countries

Global Prevalence of Obesity



- WHO 2008 males

Factors Associated with Global Mortality

	Factors	Percentage
1.	High blood pressure (BP)*	12.8
2.	Tobacco use	8.7
3.	High blood glucose*	5.8
4.	Physical inactivity	5.5
5.	Overweight and obesity*	4.8
6.	High cholesterol*	4.5
7.	Unsafe sex	4.0
8.	Alcohol use*	3.8
9.	Childhood underweight*	3.8
10.	Indoor smoke from solid fuels	3.3

*Nutrition related risk factors

59 million total global deaths in 2004 - World Health Organization

Impact of Over-Nutrition

- 53% of hospital admissions in Kenya are due to four major NCDs – diabetes, cardiovascular disease, chronic lung disease and cancers.
- 7.5 million people in Kenya are living with cardiovascular diseases.
- Over 1.5 million people are estimated to live with diabetes in Kenya,
- Cancer 28,000 new cases annually; 22,000 deaths, 7% of total national mortality

NCDs: Risk factors

4 Diseases, 4 Modifiable Shared Risk Factors

	Tobacco Use	Unhealthy diets	Physical Inactivity	Harmful Use of Alcohol
Cardio-vascular				
Diabetes				
Cancer				
Chronic Respiratory				

Summary

- Nutrition is a cross-cutting human development issue, the impact of which sometimes is hard to quantify.
- By addressing nutrition you multiply outcomes in almost all development areas.