FOCUS AREA

Multiple forms of malnutrition

Key findings from the SUN Movement MEAL baseline:

- **Nearly half of SUN countries currently experience a triple burden of child undernutrition, women's overnutrition and women's anaemia**. Most SUN countries have high levels of child stunting (>20% in 52 countries), women's anaemia (>20 % in 56 countries) and women's overweight/obesity (>35% in 36 countries).
- **There are distinctive patterns of multiple forms of malnutrition among population age-groups** (children, adolescent girls and women) **as well as contexts** (regional, income and humanitarian classification).
- **Under-nutrition is still the predominant problem for children under five in most SUN countries.** Over two thirds of SUN countries have the coexistence of high burden of stunting (>20%), anaemia (>40%) and vitamin A deficiency (>20%) among children under five.
- **The burden of anaemia among adolescent girls coexists in countries with high prevalence of underweight or overweight/obesity** but there is little overlap between underweight and overweight.
- **Malnutrition prevalence among adolescent girls and women has stagnated or increased** contrary to the downward trend in all forms of child malnutrition. Trends since 1990 show that the prevalence of adult women with a normal weight has decreased, underweight has remained stagnant and overweight and obesity have increased significantly.
- **Gender-differentiated analysis of malnutrition explains important differences among adolescents and adults**, but not young children.
- **Micronutrient deficiencies contribute greatly to the burden of malnutrition in children, adolescent girls and women**; data gaps keep this form of malnutrition "hidden".

The SUN Movement calls for an *integrated response with actions tailored to the nutritional requirements* of young children, adolescent girls and women.

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RATIONALE

The GNR acknowledges that all countries are affected by some forms of malnutrition. The SUN Movement started with a focus on under-nutrition among children but over the years had to recognize the challenge of overweight, obesity and diet-related non-communicable diseases.

This brief provides an overview on the magnitude of different forms of malnutrition among children under five years, adolescents and adults. It also explores trends over time in malnutrition and the extent to which SUN countries are characterized by the double burden of malnutrition, i.e. the coexistence of undernutrition along with overweight and obesity, or diet-related noncommunicable diseases.

CHILD MALNUTRITION

PREVALENCE OF MALNUTRITION IN YOUNG CHILDREN

Stunting affects one third of children under five, on average, across the SUN movement and remains a serious problem across all regions (Figure 1). Other forms of undernutrition – low birthweight and wasting – also affect around 10 to 15% of children under five. However, child overweight has also emerged as an issue, with levels over 7% for one in five SUN countries. Low-income and very high humanitarian risk countries bear the highest burden of child under-nutrition (Figure 2).

Figure 1: Prevalence of stunting, wasting, overweight and low birthweight in children under 5 by region

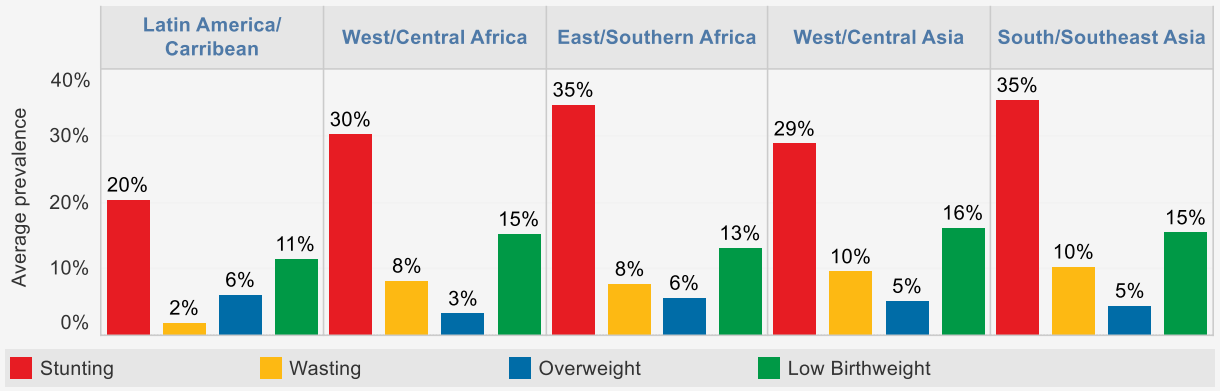
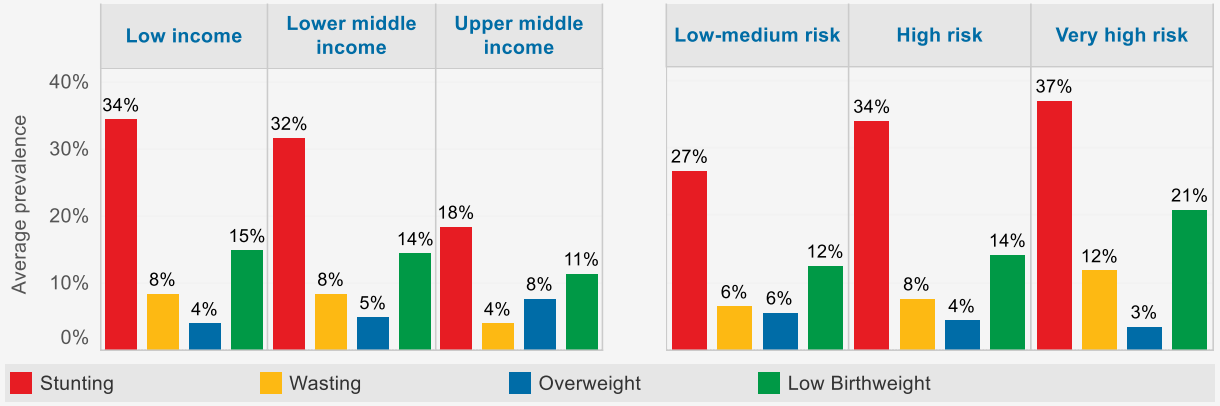


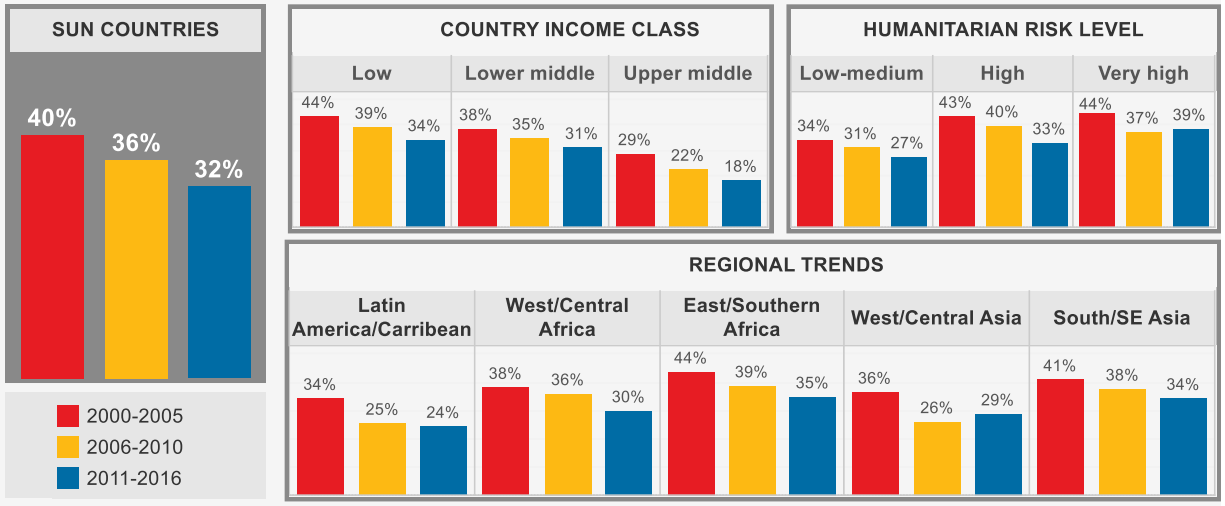
Figure 2: Child malnutrition prevalence in SUN countries by country income and humanitarian risk levels



STUNTING TRENDS

Child stunting shows a decreasing trend across SUN countries between 2000 and 2016; however, stunting has not decreased in very high humanitarian risk countries during this time.[1]

Figure 3: Trends in child stunting in SUN countries between 2000 and 2016

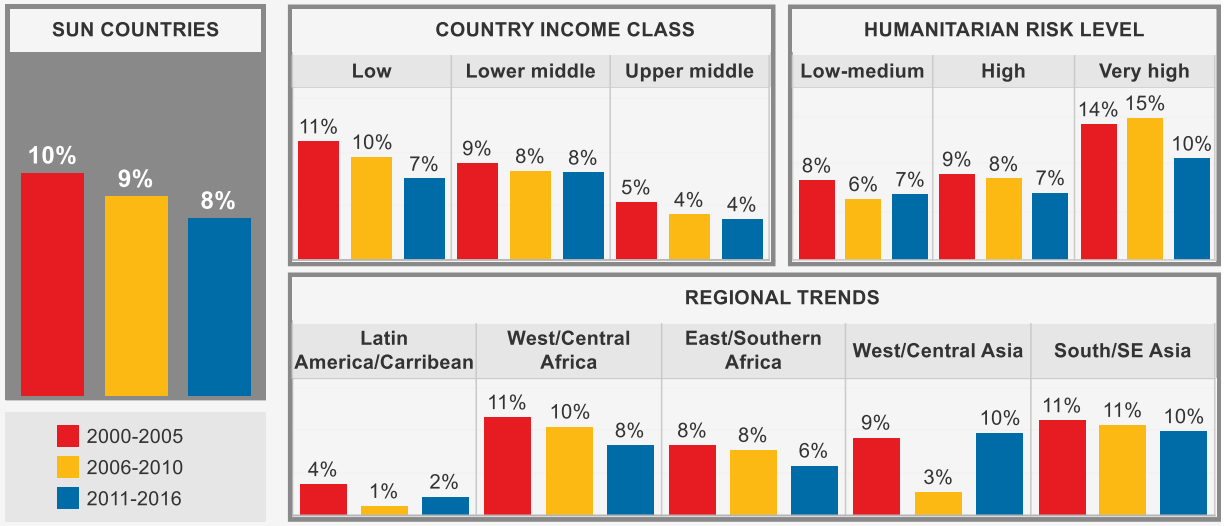


Note: Based on data available for 54 countries for 2000-2005 and 2006-2010, and 53 countries for 2011-2016.

WASTING TRENDS

Child wasting trends show little progress between 2000 and 2016 (Figure 4) but at least a tendency to decrease over time across all SUN countries, with some regional variations.[1]

Figure 4: Trends in child wasting in SUN countries between 2000 and 2016



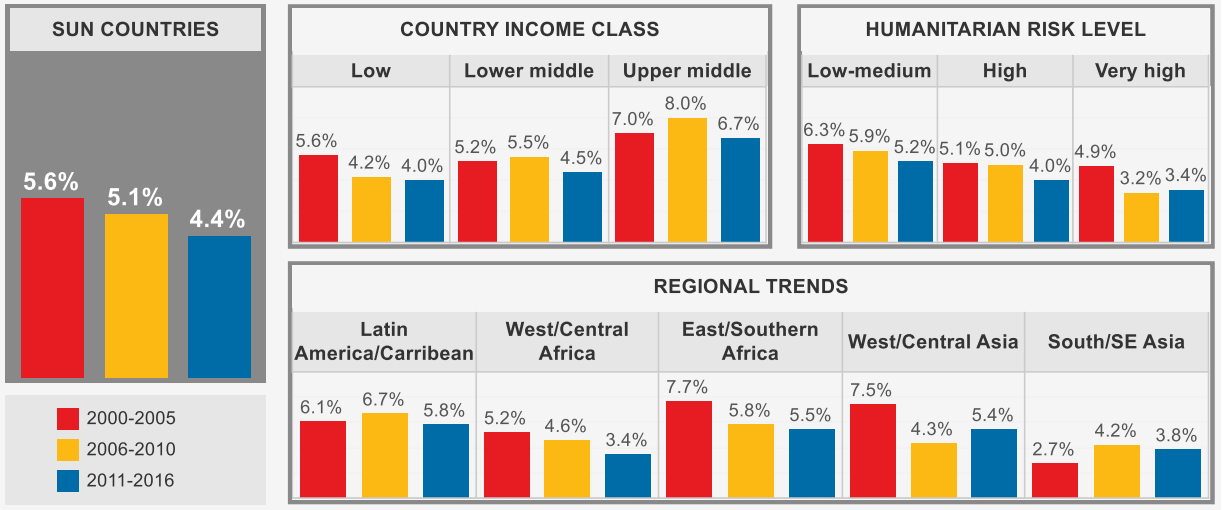
Note: Based on data available for 55 countries for 2000-2005, 52 countries for 2006-2010, and 54 countries for 2011-2016.

[1] The trend in West/Central Asia is also decreasing over time; the estimate for 2006-2010 only includes 2 of the 3 countries (not Yemen, which has the highest prevalence of both stunting and wasting).

CHILD OVERWEIGHT TRENDS

Trends in under-five overweight show a mixed picture, with 18 of 50 SUN countries experiencing an increase in prevalence between surveys conducted in 2000-2005 and 2011-2016. In most regions, child overweight is staying relatively constant.

Figure 5: Trends in child overweight in SUN countries between 2000 and 2016

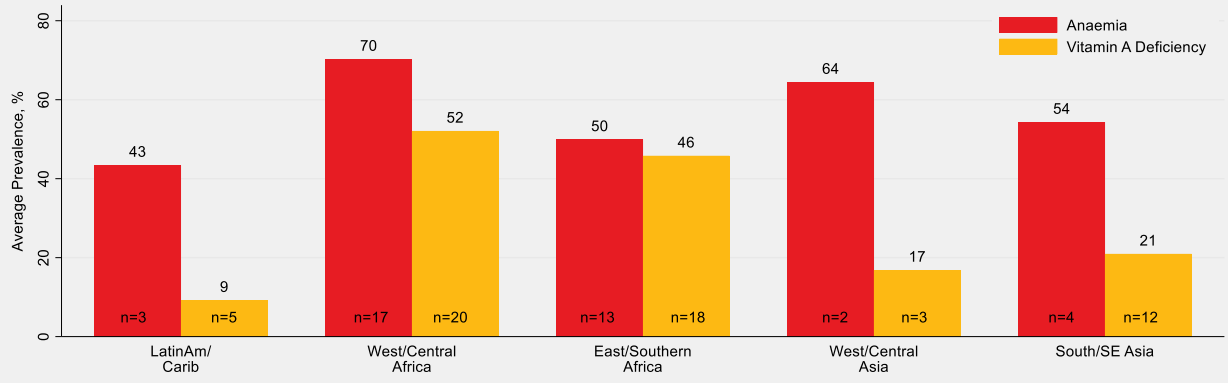


Note: Based on data available for 54 countries for 2000-2005, 51 countries for 2006-2010, and 53 countries for 2011-2016.

MICRONUTRIENT DEFICIENCIES IN CHILDREN

Young children also bear a heavy burden of micronutrient deficiencies. In the 39 SUN countries with anaemia data for children under five[2], 59% are affected (range 32% to 86%). Vitamin A deficiency affects an average of 38% of children under five[3], with wide variation across regions (Figure 6).

Figure 6: Prevalence of anaemia and vitamin A deficiency in children <5 years by region



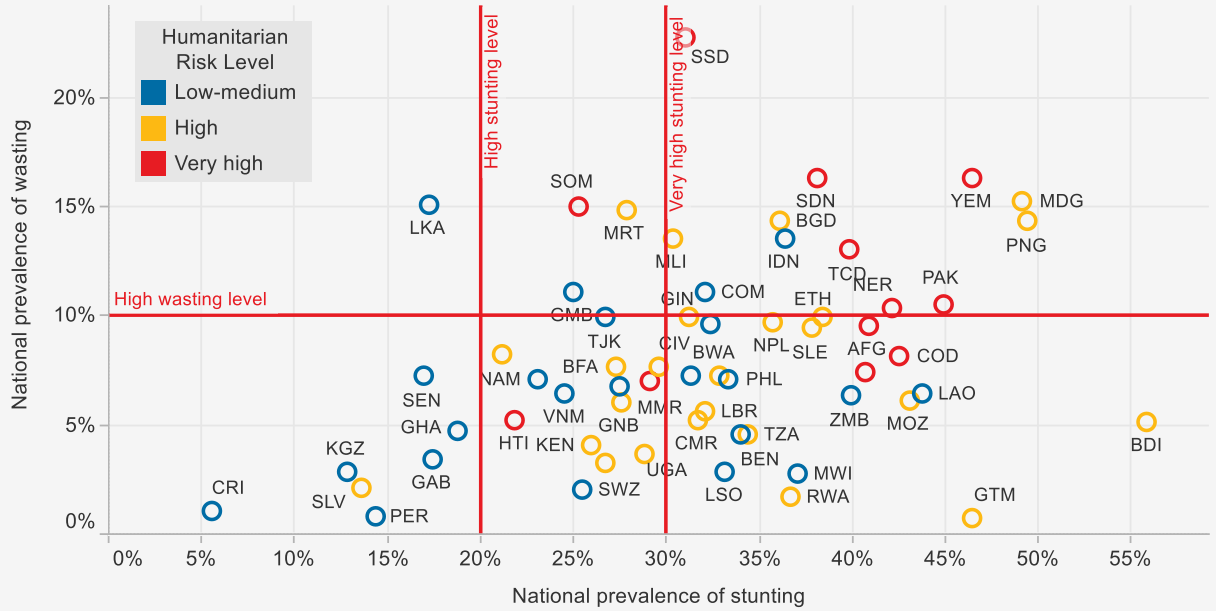
[2] Based on nationally representative Demographic and Health Surveys or Malaria Indicator Surveys.

[3] Vitamin A deficiency estimates (reference year 2013) based on Stevens et al. (2015). Trends and mortality effects of vitamin A deficiency in children in 138 low-income and middle-income countries between 1991 and 2013: a pooled analysis of population-based surveys. Lancet Global Health, 3(9):e528-e536.

MULTIPLE BURDEN OF MALNUTRITION IN CHILDREN

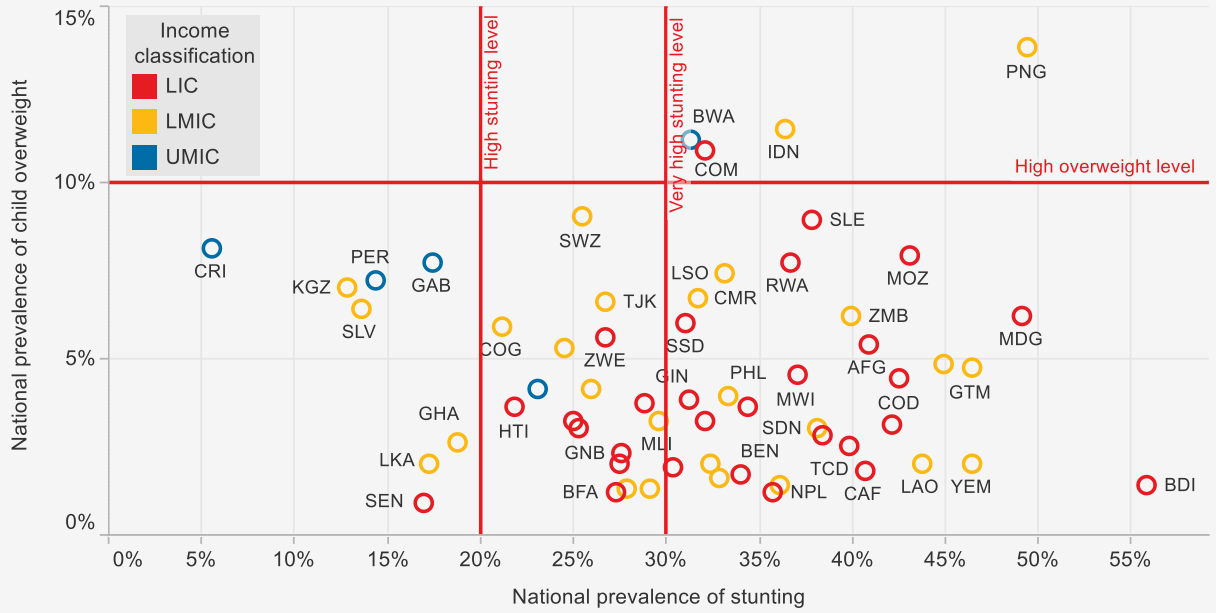
Only seven countries have levels of wasting and stunting below "high" prevalence thresholds (Figure 7). This suggests that under-nutrition is still the predominant problem for children under five in most SUN countries.

Figure 7: Prevalence of stunting and wasting in children under five by country and humanitarian risk level



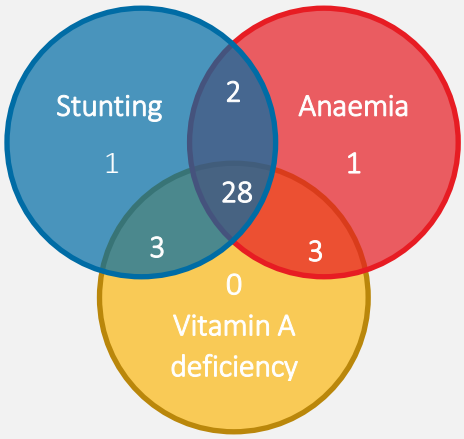
Only four SUN countries experience the double burden of high stunting and high overweight among children under five (Figure 8).

Figure 8: Prevalence of stunting and overweight in children under five by country and income classification



Based on the data available, over two thirds (28/39) of SUN countries with a high burden of stunting also have a high burden of anaemia (>40%) and a high burden of vitamin A deficiency (>20%) among children under five years of age (Figure 9).

Figure 9: Multiple burden of under-nutrition in children under-five



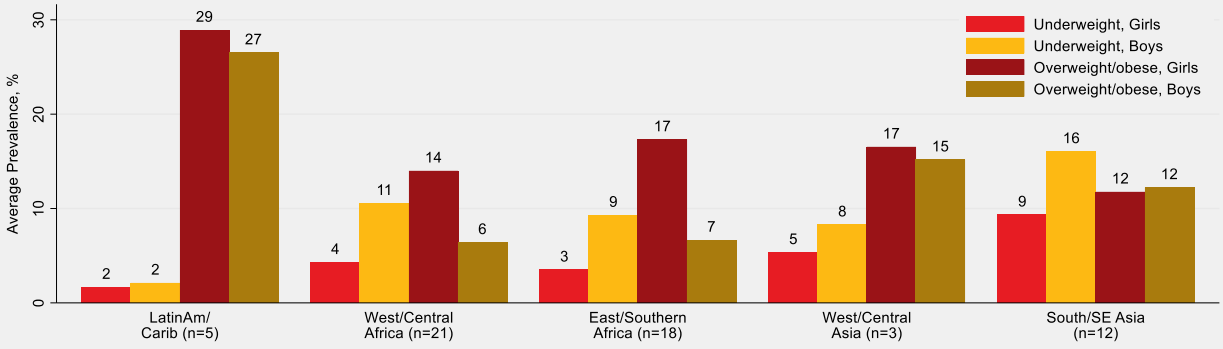
ADOLESCENT MALNUTRITION

Nutritional status during adolescence, defined as age 10-19 years, plays an important role in the life cycle. Adolescence is an opportunity to break intergenerational cycles of malnutrition and poor health, particularly for girls.

PREVALENCE AND TRENDS IN UNDERWEIGHT AND OVERWEIGHT

Malnutrition among adolescents between the ages of 10 to 19 years shows very different patterns for girls and boys, as well as differences between regions (Figure 10). Overall, boys have higher levels of underweight (average of 10% across SUN countries) compared to girls (5%) but lower levels of overweight and obesity. Overweight and obesity among girls is 16%, on average, but varies widely across regions, from 12% in South and Southeast Asia to 29% in countries from Latin America.

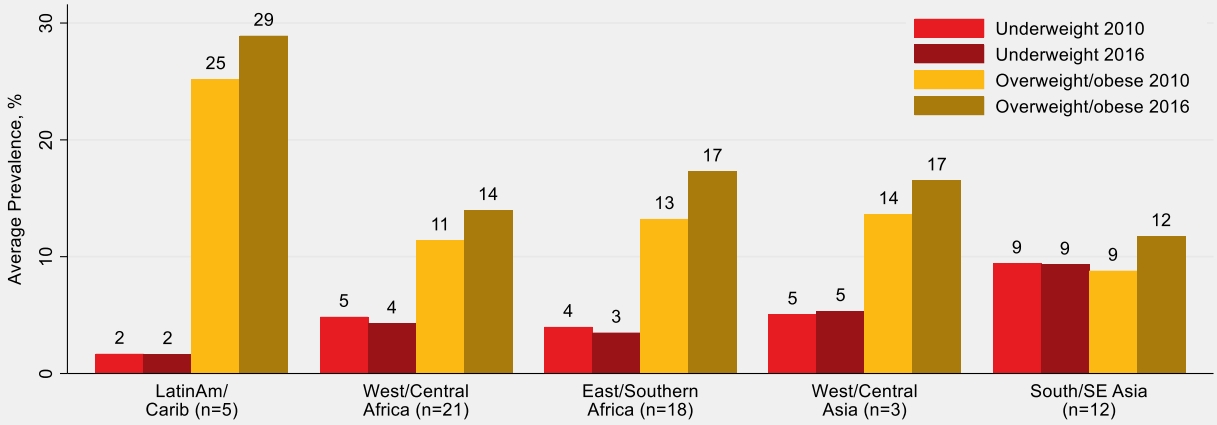
Figure 10: Prevalence of underweight and overweight/obesity in adolescent girls and boys (10-19 y) in 2016 by region



Source: NCD-RisC estimates for 59 countries (no data for South Sudan). Underweight defined as BMI <-2 SD; overweight/obese defined as BMI >1 SD.

The trend between 2010 and 2016 shows an increase in overweight and obesity among adolescent girls across all regions and no change in the low levels of underweight (Figure 11).

Figure 11: Prevalence of underweight and overweight/obesity in adolescent girls in 2010 and 2016 by region



Source: NCD-RisC estimates for girls 10-19 years in 59 countries (no data for South Sudan). Underweight defined as BMI <-2 SD; overweight/obese defined as BMI >1 SD.

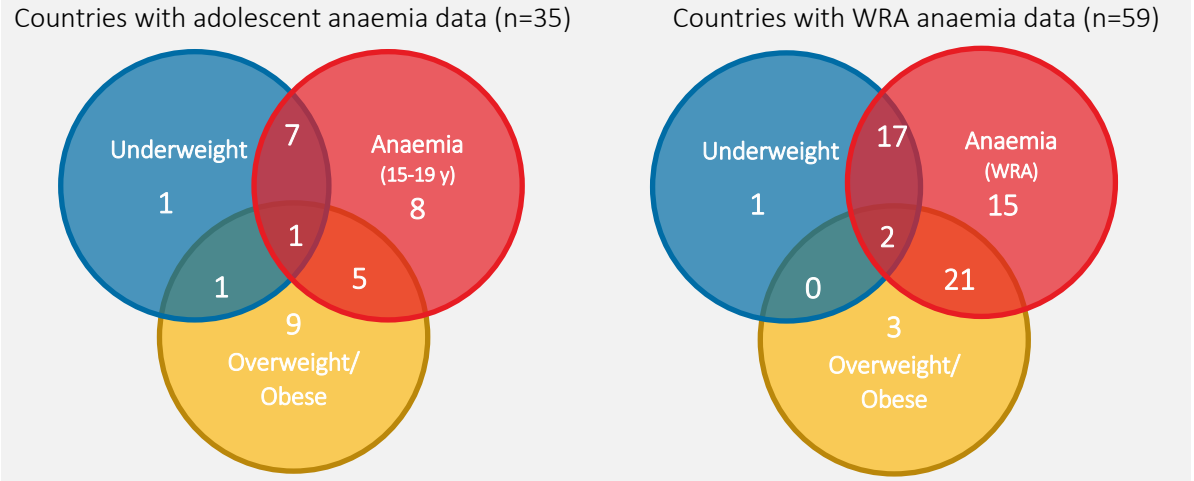
PREVALENCE OF ANAEMIA IN ADOLESCENT GIRLS

Adolescent girls are particularly vulnerable to anaemia, especially in contexts where they are married at an early age and exposed to a greater risk of reproductive morbidity and mortality. Based on available survey data for 35 SUN countries, 41% of girls 15-19 years of age are anaemic, similar to the estimated prevalence among women 15-49 years of 38% (n=60, reference year 2016).

MULTIPLE BURDEN OF MALNUTRITION IN ADOLESCENT GIRLS

Figure 12 highlights the fact that there is very little overlap of underweight and overweight in adolescent girls in SUN countries. Instead, there is prevalent anaemia among adolescent girls in both types of countries, those with high levels of underweight (>5%, n=20 countries) and those with high levels of overweight/obesity (>15%, n=26 countries).

Figure 12: Multiple burden of malnutrition in adolescent girls



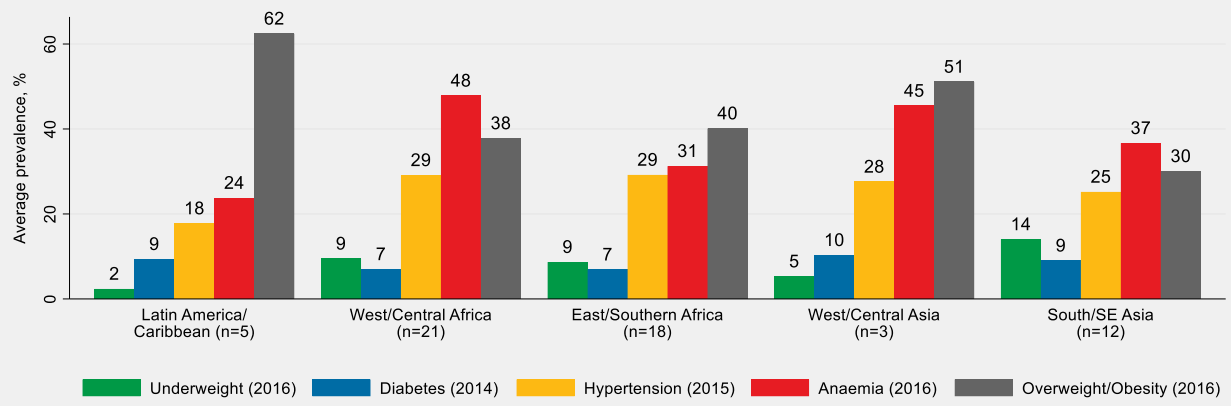
Adolescent Girls: Anaemia (15-19y) >40% = 21 countries; Overweight/obesity >15% = 26 countries; Underweight >5% = 20 countries

ADULT MALNUTRITION

PREVALENCE OF MALNUTRITION AMONG WOMEN

The nutritional status of women in SUN countries shows high levels of anaemia overall and variation in underweight prevalence, with the highest (14%) in South and Southeast Asia (Figure 13). However, prevalence of overweight and obesity is now a much bigger issue and disproportionally affects women compared to men (40% vs. 26%, respectively, in 2016). Overweight and obesity prevalence also varies widely across regions, ranging from 30% to 62%.

Figure 13: Women's nutrition status by SUN country regions

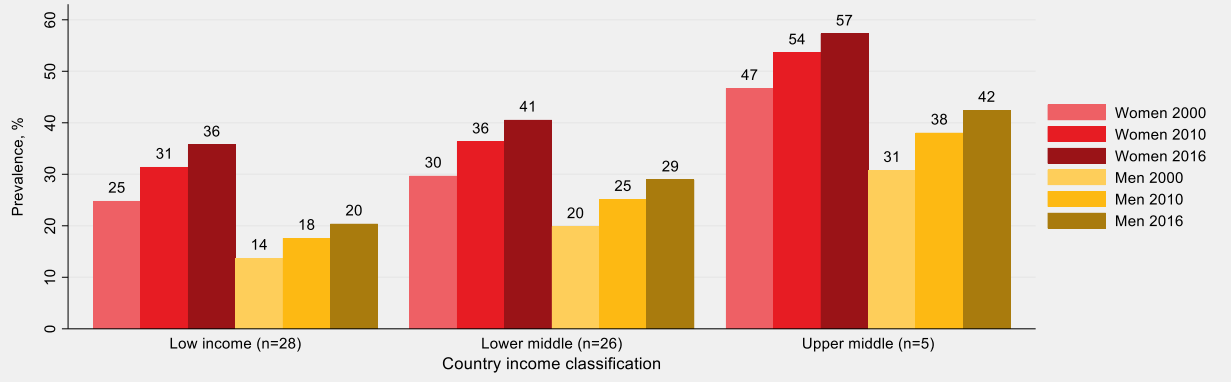


Levels of diabetes among women are similar to the global estimates (8%) with not much regional variation while levels of hypertension in women are higher, on average, in SUN countries (27%) than global estimates (20%), albeit with lower prevalence in Latin America.

TRENDS IN ADULT WEIGHT

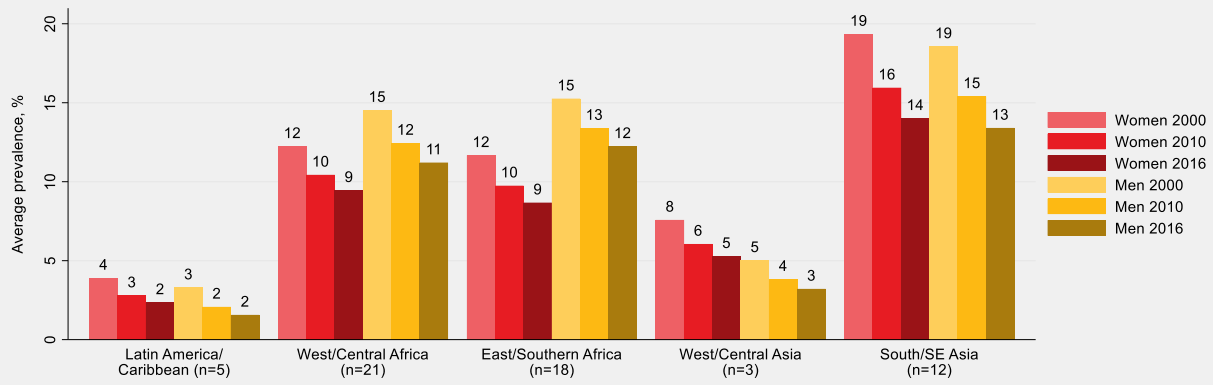
The prevalence of adult overweight and obesity has increased for both genders at similar rates between 2000 and 2016 (Figure 14); however, men started from a lower point in 2000 and remain lower over time despite the increase. Overweight and obesity in adults is highest in upper middle-income SUN countries.

Figure 14: Prevalence of overweight and obesity between 2000 and 2016 by sex and country income classification



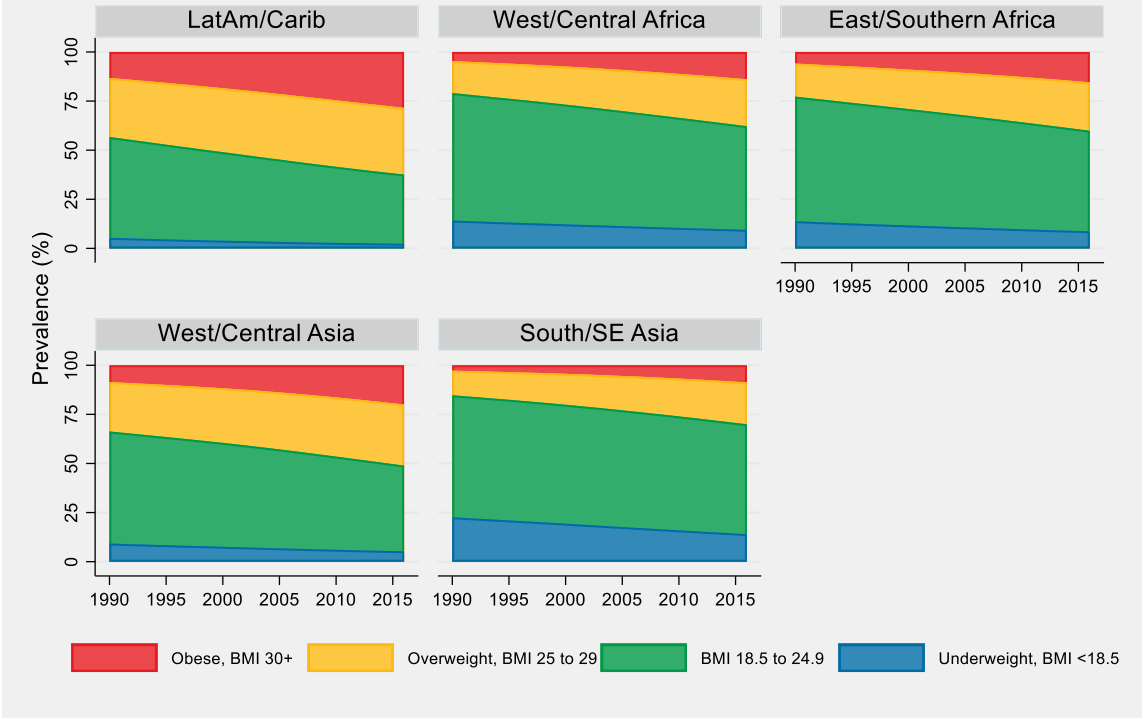
Large regional variation is also evident for adult under-nutrition trends in SUN countries (Figure 15). In Latin America and West/Central Asia, men have equal or slightly lower levels of underweight compared to women but overall, underweight prevalence is relatively low for both sexes. In Africa, men have higher levels of underweight than women, similar to patterns in adolescence. South and Southeast Asian countries have the highest levels of underweight for both men and women but they are relatively similar across gender.

Figure 15: Prevalence of underweight (BMI <18.5) between 2000 and 2016 by sex and region



Regional trends between 1990 and 2015 show that the prevalence of adult women with a normal BMI has decreased, underweight has remained stagnant and obesity and overweight have increased significantly (Figure 16).

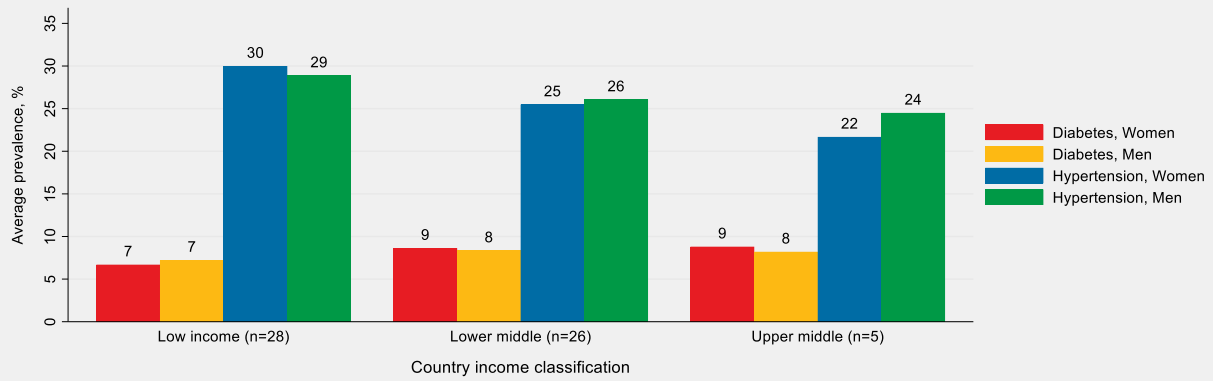
Figure 16: Trends in prevalence of BMI categories in adult women by region



PREVALENCE OF DIET-RELATED NON-COMMUNICABLE DISEASES

Prevalence of diabetes and hypertension is similar in adult men and women; however, hypertension is higher among adults living in low-income countries compared to others (Figure 17).

Figure 17: Prevalence of diabetes (2014) and hypertension (2015) by sex and country income classification

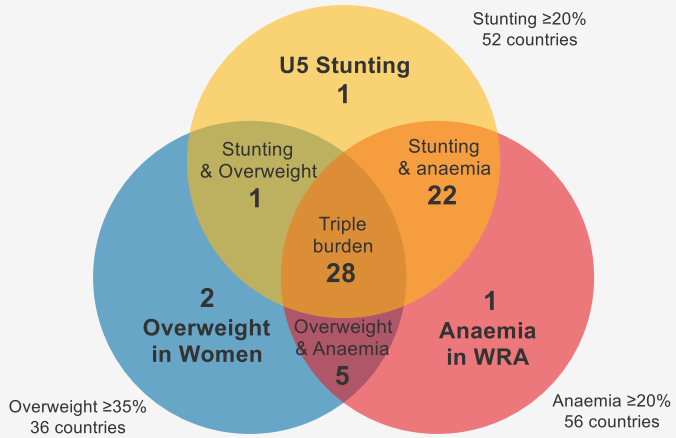


COUNTRY-LEVEL MULTIPLE BURDEN OF MALNUTRITION

Although most SUN countries continue to experience high levels of stunting among children under five (52 countries with levels over 20%), anaemia prevalence in women is also high (>20%) in 56 SUN countries and the problem of overweight/obesity in women exceeds 35% in 36 SUN countries.

Nearly half of SUN countries currently experience a triple burden of child undernutrition, women's overnutrition and women's anaemia.

Figure 18: Number of SUN countries facing multiple burdens of malnutrition



METHODOLOGY

The SUN Movement's Monitoring, Evaluation, Accountability and Learning (MEAL) system is based on the SUN Movement's Theory of Change and includes 79 key indicators that align with globally-agreed monitoring frameworks and initiatives or are specific to the SUN Movement (e.g. SUN Joint Annual Assessments). A detailed description of the MEAL Framework of Results and Lists of Indicators, including definitions and data sources, is available on the SUN website (http://scalingupnutrition.org/progress-impact/monitoring-evaluation-accountability-learning-meal/).

The results presented in this brief are based on the SUN Movement 2016 MEAL Baseline dataset (March 2018 version). The data analysis process used descriptive statistics to examine the status of countries for various indicators of malnutrition. Unless otherwise stated, average values are based on the mean; associations shown do not account for potential confounding factors.

This brief, prepared by Patrizia Fracassi (SUN Movement Secretariat) and Kendra Siekmans (TAN Consultant), was supported by Nutrition International under its UK Department for International Development-supported Technical Assistance for Nutrition project.