

# LEVELS AND TRENDS IN CHILD MALNUTRITION

UNICEF / WHO / World Bank Group Joint Child Malnutrition Estimates

Key findings of the 2018 edition

Stunting affected an estimated 22.2 per cent or 150.8 million children under 5 globally in 2017.



**STUNTED**  
151 million

In 2017, wasting continued to threaten the lives of an estimated 7.5 per cent or 50.5 million children under 5 globally.

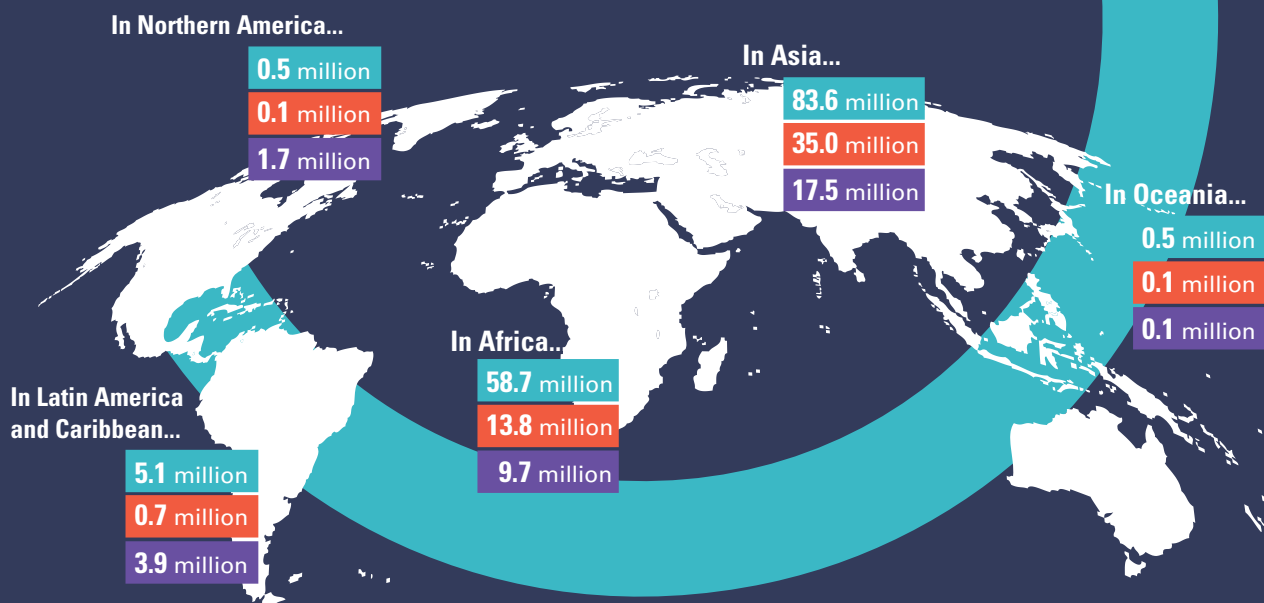


**WASTED**  
51 million

An estimated 5.6 per cent or 38.3 million children under 5 around the world were overweight in 2017.



**OVERWEIGHT**  
38 million



These new estimates supersede former analyses and results published by UNICEF, WHO and the World Bank Group.

# The ultimate aim is for all children to be free of malnutrition in all its forms



**Good nutrition allows children to survive, grow, develop, learn, play, participate and contribute** – while malnutrition robs children of their futures and leaves young lives hanging in the balance.

Stunting is the devastating result of poor nutrition in-utero and early childhood. Children suffering from stunting may never attain their full possible height and their brains may never develop to their full cognitive potential. Globally, approximately 151 million children under 5 suffer from stunting. These children begin their lives at a marked disadvantage: they face learning difficulties in school, earn less as adults, and face barriers to participation in their communities.

Wasting in children is the life-threatening result of poor nutrient intake and/or disease. Children suffering from wasting have weakened immunity, are susceptible to long term developmental delays, and face an increased risk of death, particularly when wasting is severe. These children require urgent feeding, treatment and care to survive. In 2017, nearly 51 million children under 5 were wasted and 16 million were severely wasted.

There is also an emerging face of malnutrition: childhood overweight and obesity. There are now nearly 38 million overweight children globally, an increase of 8 million since 2000. The emergence of overweight and obesity has been

shaped, at least in part, by industry marketing and greater access to processed foods, along with lower levels of physical activity.

While malnutrition can manifest in multiple ways, the path to prevention is virtually identical: adequate maternal nutrition before and during pregnancy and lactation; optimal breastfeeding in the first two years of life; nutritious, diverse and safe foods in early childhood; and a healthy environment, including access to basic health, water, hygiene and sanitation services and opportunities for safe physical activity. These key ingredients can deliver a world where children are free from all forms of malnutrition.

Despite this opportunity, the UNICEF, WHO, World Bank global and regional child malnutrition estimates reveal that we are still far from a world without malnutrition. The joint estimates, published in May 2018, cover indicators of stunting, wasting, severe wasting and overweight among children under 5, and reveal insufficient progress to reach the World Health Assembly targets set for 2025 and the Sustainable Development Goals set for 2030.

Improving children's nutrition requires effective and sustained multi-sectoral nutrition programming over the long term, and many countries are moving in the right direction. Regular data collection is critical to monitor and analyse country, regional and global progress going forward.

## Forms of malnutrition\* highlighted in this key findings report



**Stunting** refers to a child who is too short for his or her age. These children can suffer severe irreversible physical and cognitive damage that accompanies stunted growth. The devastating effects of stunting can last a lifetime and even affect the next generation.



**Overweight** refers to a child who is too heavy for his or her height. This form of malnutrition results from energy intakes from food and beverages that exceed children's energy requirements. Overweight increases the risk of diet-related noncommunicable diseases later in life.



**Wasting** refers to a child who is too thin for his or her height. Wasting is the result of recent rapid weight loss or the failure to gain weight. A child who is moderately or severely wasted has an increased risk of death, but treatment is possible.



**Overweight and stunted**



**Stunted and wasted**

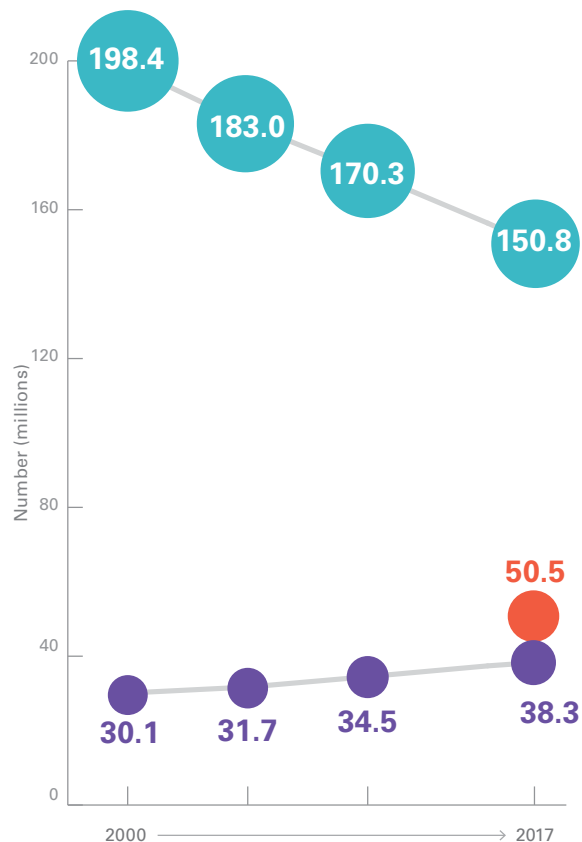
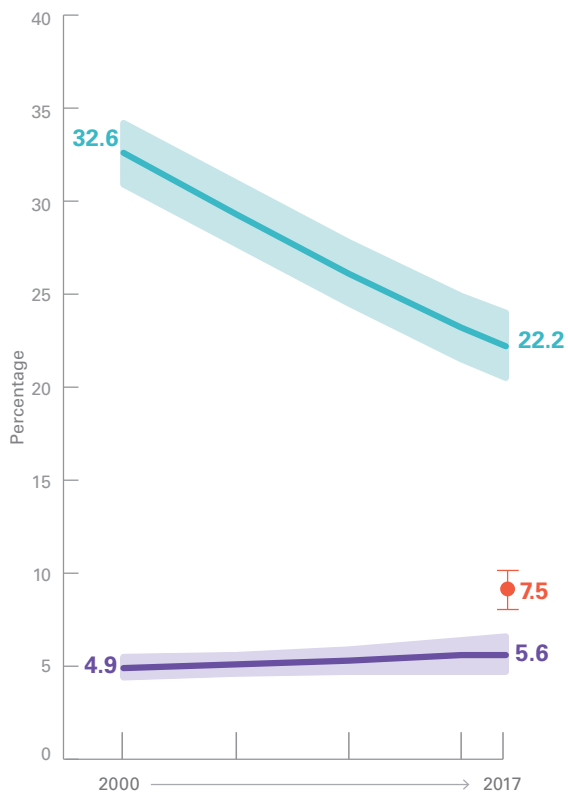
\* Some children suffer from more than one form of malnutrition – such as **stunting and overweight** or **stunting and wasting**. There are currently no joint global or regional estimates for these combined conditions.

# GLOBAL OVERVIEW



## Malnutrition rates remain alarming: stunting is declining too slowly while wasting still impacts the lives of far too many young children

 stunting
  overweight
  wasting
  95% confidence interval



Percentage of stunted, overweight and wasted children under 5, global, 2000–2017

Number (millions) of stunted, overweight and wasted children under 5, global, 2000–2017

Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2018 edition. See Notes on Data on page 14 on why only one time point is presented for wasting on the graphs above.

## Africa and Asia bear the greatest share of all forms of malnutrition



In 2017, more than half of all **stunted** children under 5 lived in Asia and more than one third lived in Africa.

In 2017, almost half of all **overweight** children under 5 lived in Asia and one quarter lived in Africa.

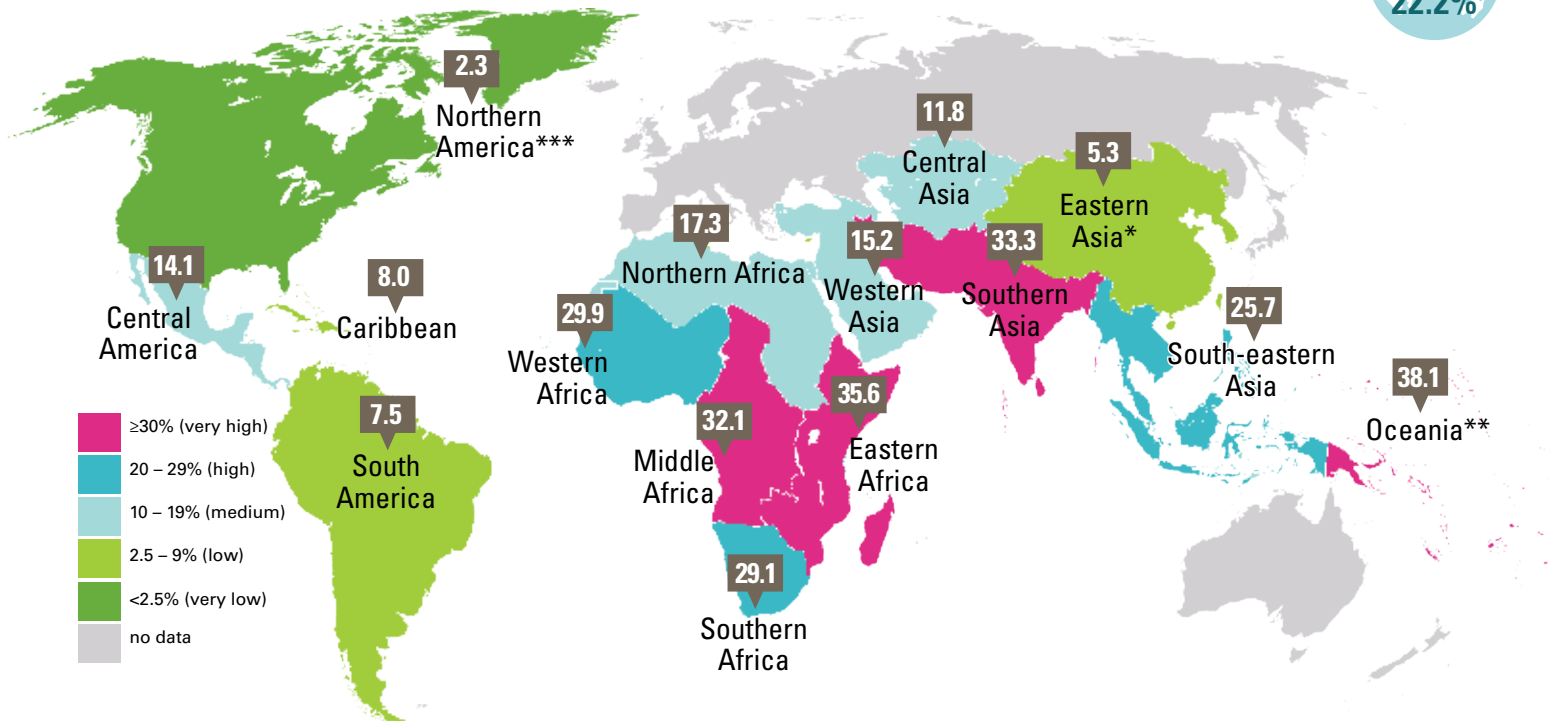
In 2017, more than two thirds of all **wasted** children under 5 lived in Asia and more than one quarter lived in Africa.

# Stunting PREVALENCE

## In 7 sub-regions, at least one in every four children under 5 is stunted

Percentage of stunted children under 5, by United Nations sub-region, 2017

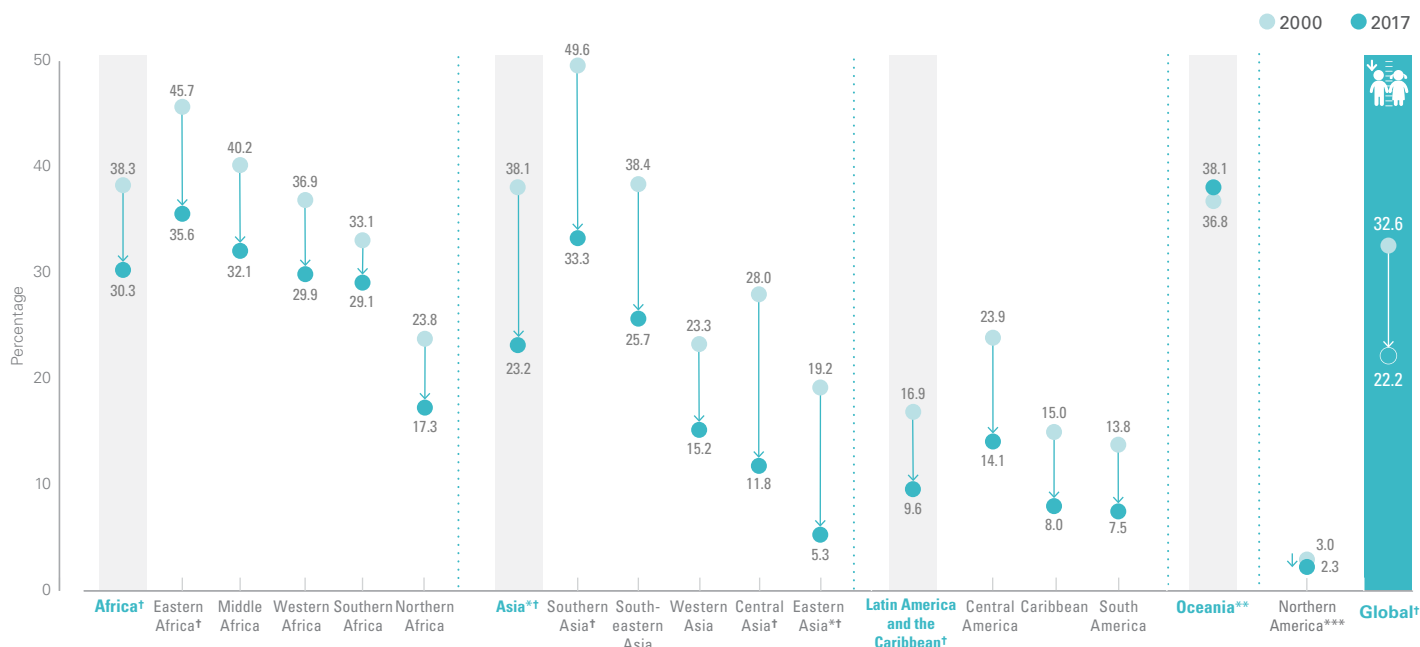
GLOBAL  
22.2%



Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2018 edition. Note: \*Eastern Asia excluding Japan; \*\*Oceania excluding Australia and New Zealand. \*\*\*Northern America sub-regional average based on United States data. There is no estimate available for the sub-regions of Europe or Australia and New Zealand. These maps are stylized and not to scale and do not reflect a position by UNICEF, WHO or World Bank Group on the legal status of any country or territory or the delimitation of any frontiers.

## Large disparities in stunting reduction exist within regions/between sub-regions

Trends in the percentage of stunted children under 5, by United Nations region/sub-region, 2000 – 2017



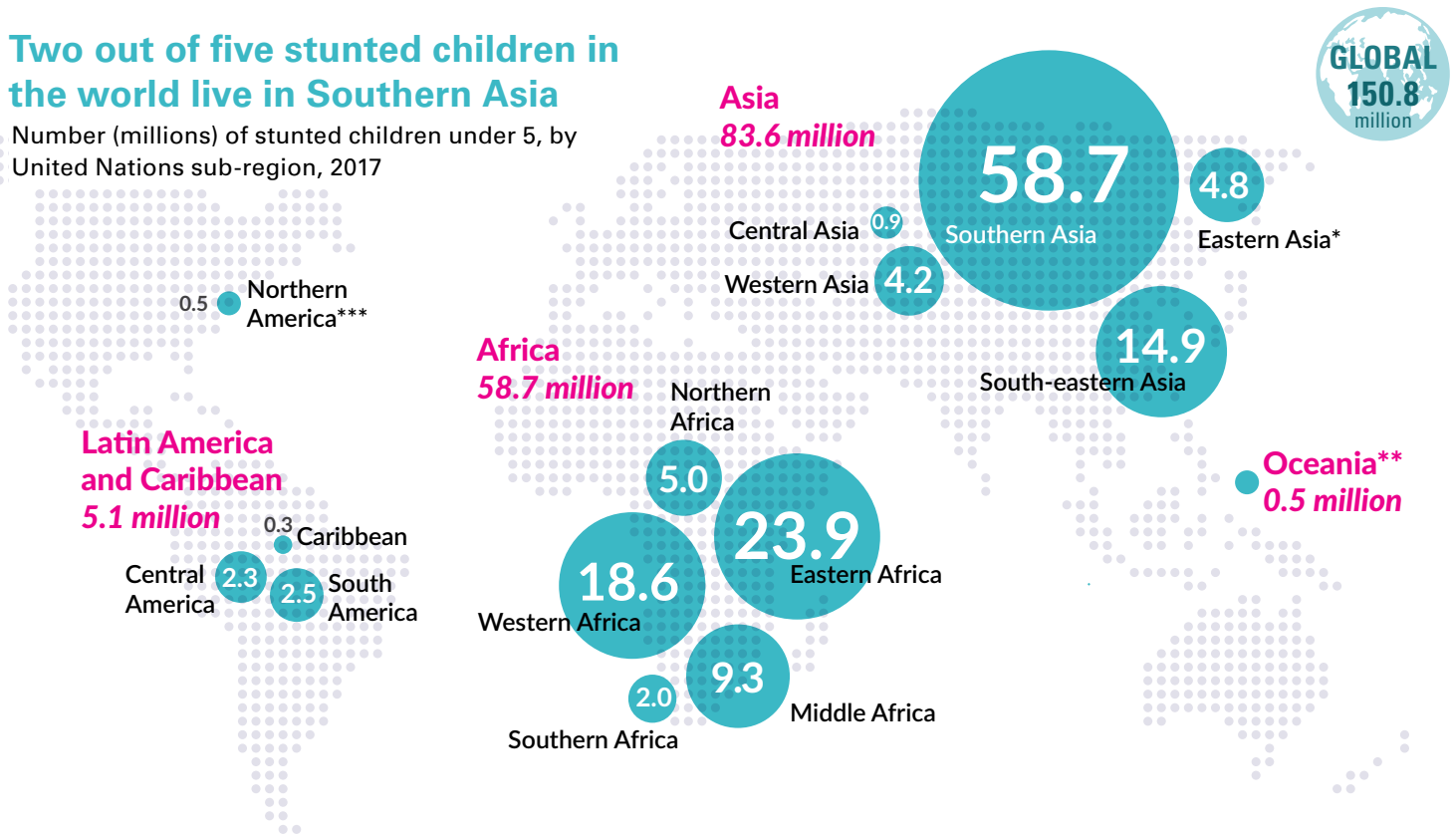
Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2018 edition. Note: \*Asia and Eastern Asia excluding Japan. \*\*Oceania excluding Australia and New Zealand. \*\*\*Northern America sub-regional average based on United States data only. There is no estimate available for the More Developed Region or for sub-regions of Europe or Australia and New Zealand. †represents regions/subregions where the change has been statistically significant; see page 12 for the 95% confidence intervals for graphed estimates.

# Stunting

## NUMBERS AFFECTED

### Two out of five stunted children in the world live in Southern Asia

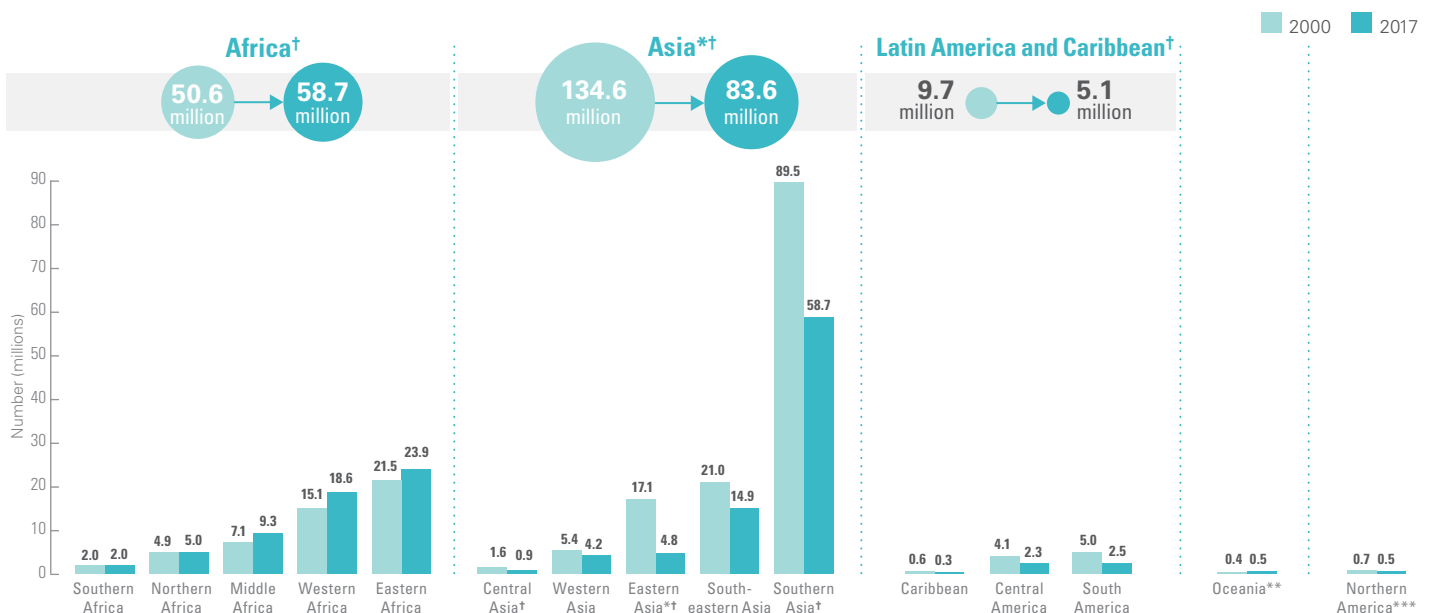
Number (millions) of stunted children under 5, by United Nations sub-region, 2017



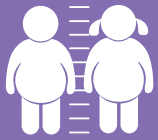
Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2018 edition. Note: \*Eastern Asia excluding Japan; \*\*Oceania excluding Australia and New Zealand, \*\*\*The Northern America sub-regional average based on United States data; There is no estimate available for the More Developed Region or for sub-regions of Europe or Australia and New Zealand. Aggregates may not add up due to rounding.

### Africa is the only region where the number of stunted children has risen

Trends in the number (millions) of stunted children under 5, by United Nations region/sub-region, 2000 and 2017



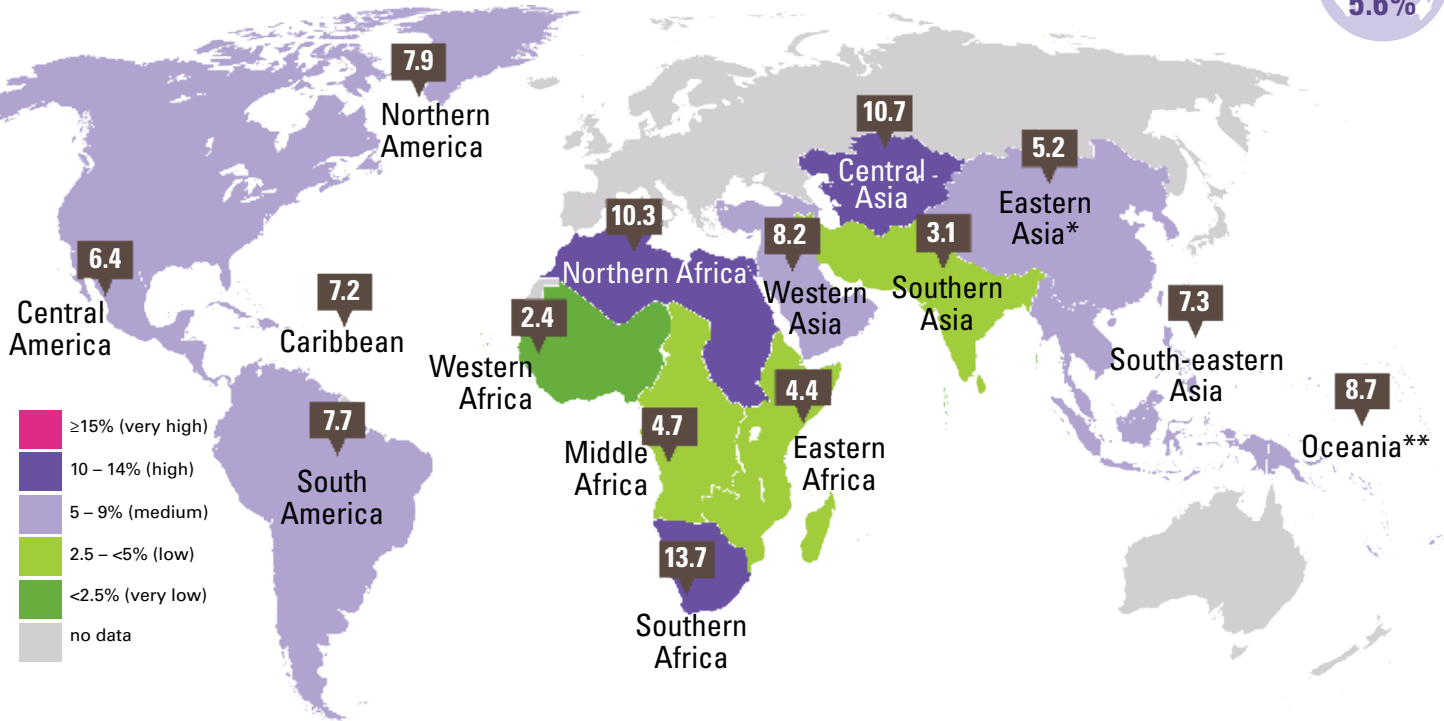
Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2018 edition. Note: \*Asia and Eastern Asia excluding Japan. \*\*Oceania excluding Australia and New Zealand. \*\*\*Northern America sub-regional average based on United States data only. There is no estimate available for the More Developed Region or for sub-regions of Europe or Australia and New Zealand. †represents regions/subregions where the change has been statistically significant; see page 13 for the 95% confidence intervals for graphed estimates.



# Overweight PREVALENCE

**In three sub-regions, at least one in every ten children under five is overweight**  
Percentage of overweight children under 5, by United Nations sub-region, 2017

**GLOBAL**  
5.6%



Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2018 edition. Note: \*Eastern Asia excluding Japan; \*\*Oceania excluding Australia and New Zealand. There is no estimate available for the sub-regions of Europe or Australia and New Zealand. These maps are stylized and not to scale and do not reflect a position by UNICEF, WHO or World Bank Group on the legal status of any country or territory or the delimitation of any frontiers. The legend contains a category for >15 per cent (pink) but there is no sub-region with a rate this high.

**There has been no progress to stem the rate of overweight in more than 15 years**  
Trends in the percentage of overweight children under 5, by United Nations region/sub-region, 2000 – 2017



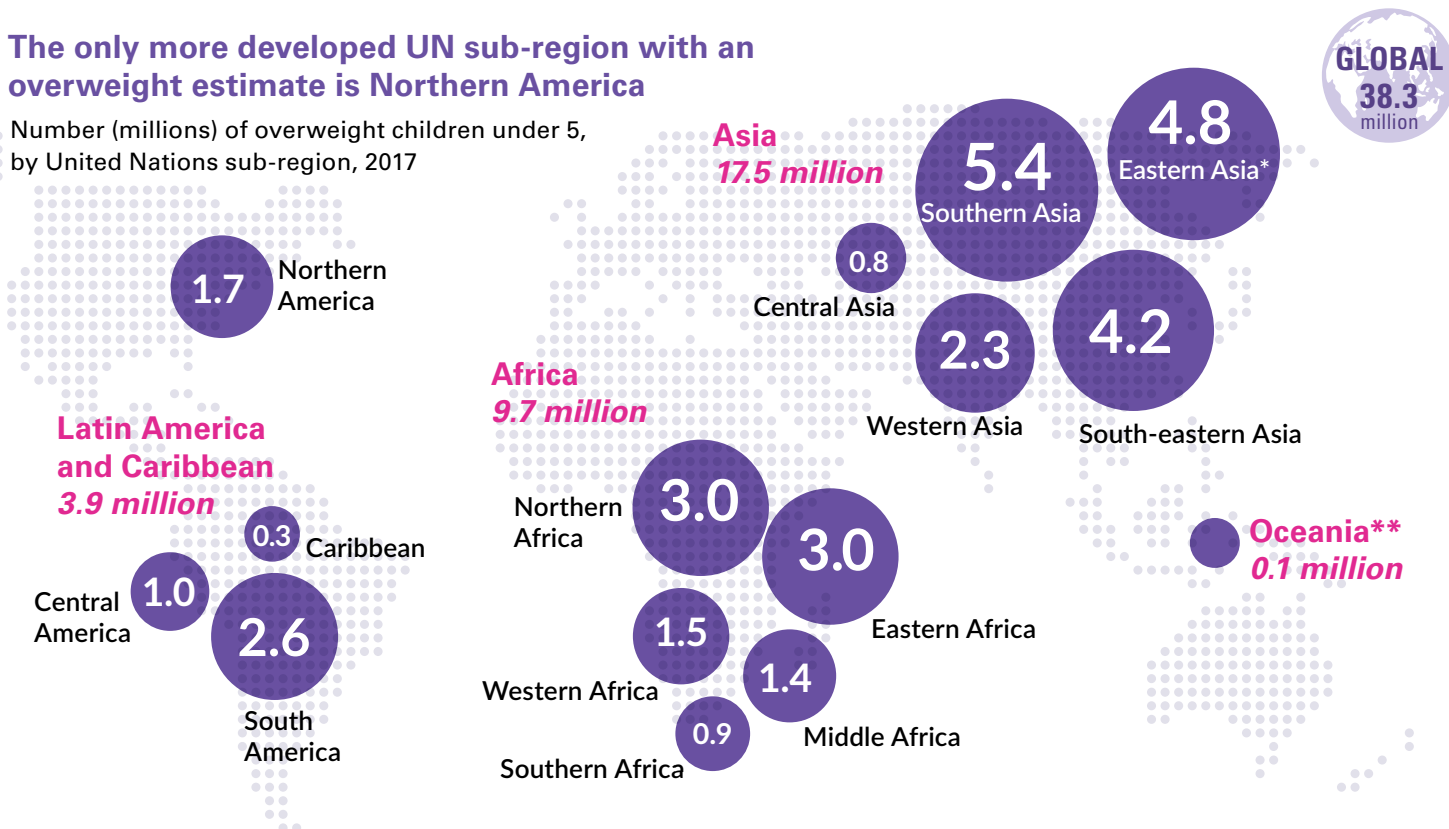
Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2018 edition. Note: \*Asia and Eastern Asia excluding Japan. \*\*Oceania excluding Australia and New Zealand. There is no estimate available for the More Developed Region or for sub-regions of Europe or Australia and New Zealand. †represents regions/subregions where the change has been statistically significant; see page 12 for the 95% confidence intervals for graphed estimates.

# Overweight

## NUMBERS AFFECTED

The only more developed UN sub-region with an overweight estimate is Northern America

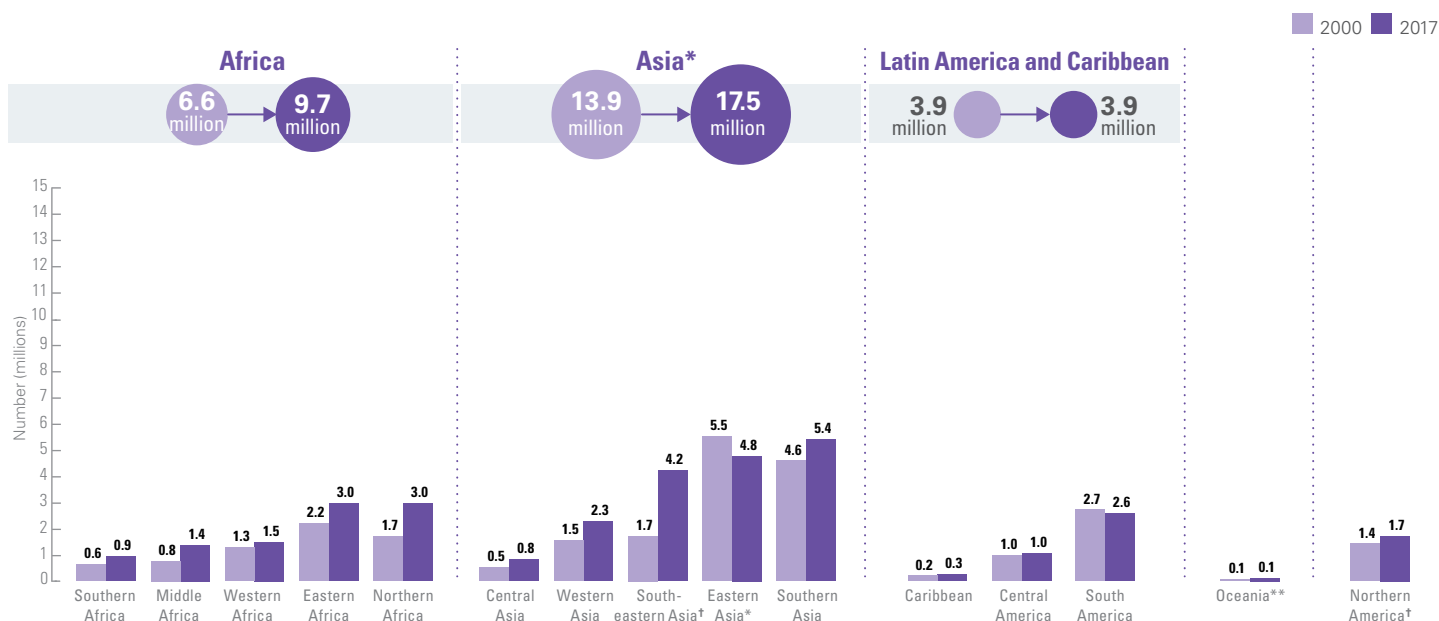
Number (millions) of overweight children under 5, by United Nations sub-region, 2017



Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2018 edition. Note: \*Eastern Asia excluding Japan. \*\*Oceania excluding Australia and New Zealand. There is no estimate available for the More Developed Region or for sub-regions of Europe or Australia and New Zealand. Aggregates may not add up due to rounding.

Only two sub-regions have seen a significant increase in the number of overweight children

Number (millions) of overweight children under 5, by United Nations region, 2000 and 2017



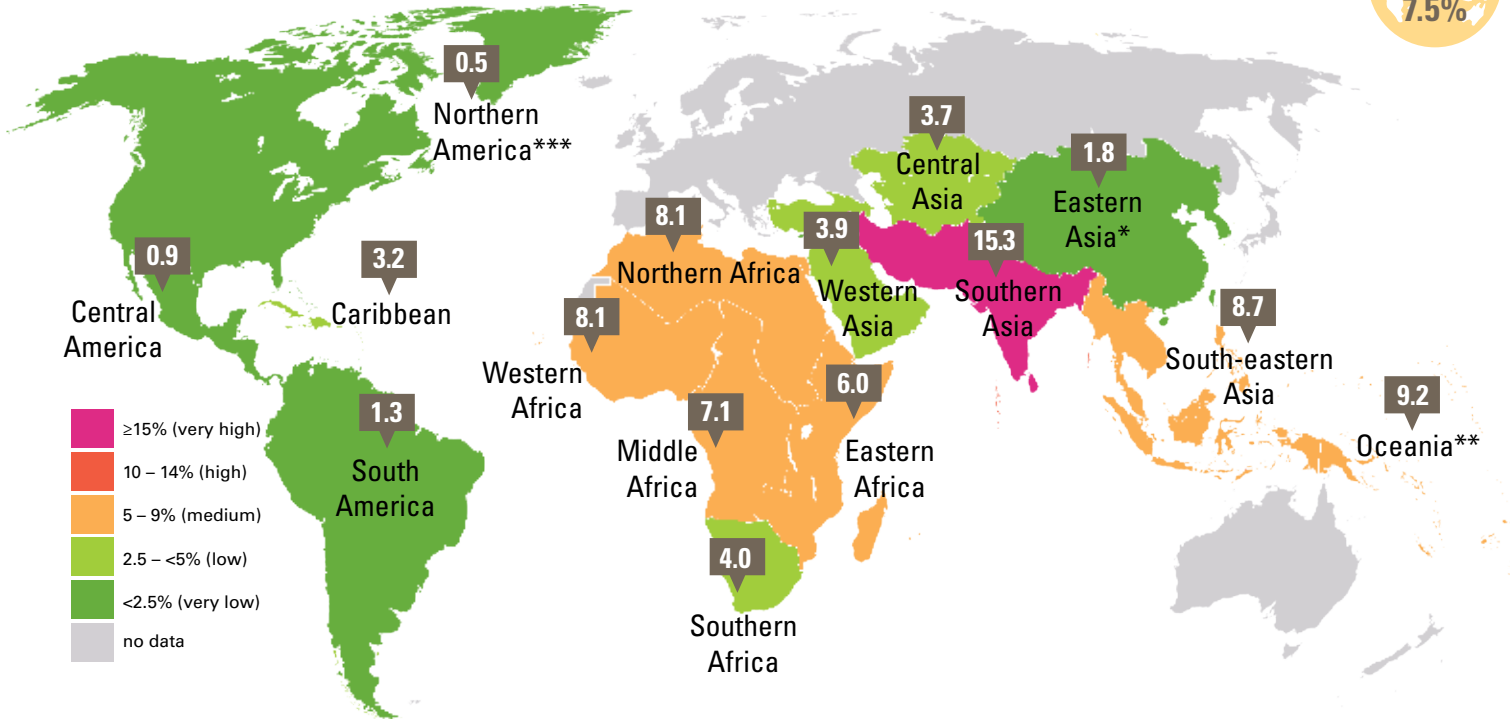
Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2018 edition. Note: \*Asia and Eastern Asia excluding Japan. \*\*Oceania excluding Australia and New Zealand. There is no estimate available for the More Developed Region or for sub-regions of Europe or Australia and New Zealand. †represents regions/subregions where the change has been statistically significant; see page 13 for the 95% confidence intervals for graphed estimates.



# Wasting PREVALENCE

## Wasting in Southern Asia constitutes a critical public health emergency

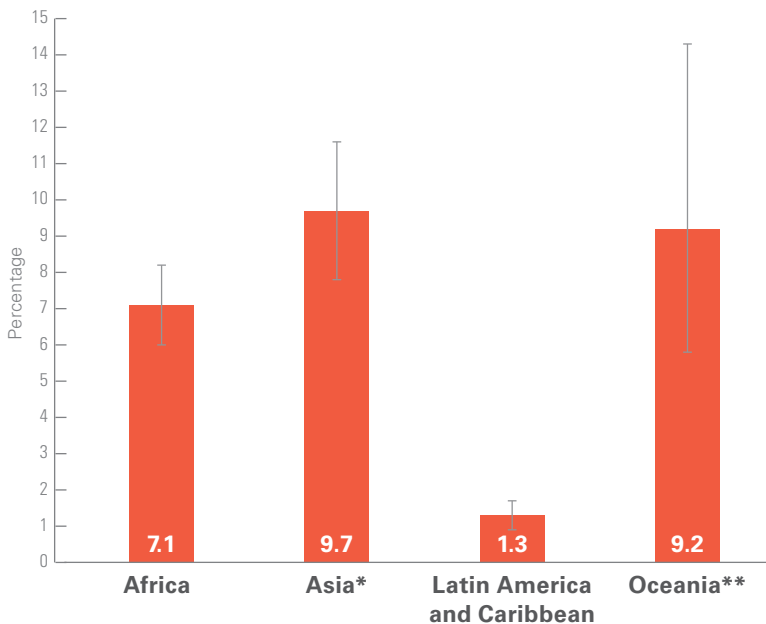
Percentage of wasted children under 5, by United Nations sub-region, 2017



Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2018 edition. Note: \*Eastern Asia excluding Japan; \*\*Oceania excluding Australia and New Zealand. \*\*\*Northern America sub-regional average based on United States data. There is no estimate available for the sub-regions of Europe or Australia and New Zealand. These maps are stylized and not to scale and do not reflect a position by UNICEF, WHO or World Bank Group on the legal status of any country or territory or the delimitation of any frontiers.

## Millions of young lives are in jeopardy around the globe due to wasting

Percentage of wasted children under 5, by United Nations region, 2017



In Asia and Oceania, wasting is putting nearly **one in ten** children under 5 at increased risk of death

Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2018 edition. Includes 95% confidence interval. Note: \*Asia excluding Japan; \*\*Oceania excluding Australia and New Zealand.



# Wasting

## NUMBERS AFFECTED

### More than half of all wasted children in the world live in Southern Asia

Number (millions) of wasted children under 5, by United Nations sub-region, 2017

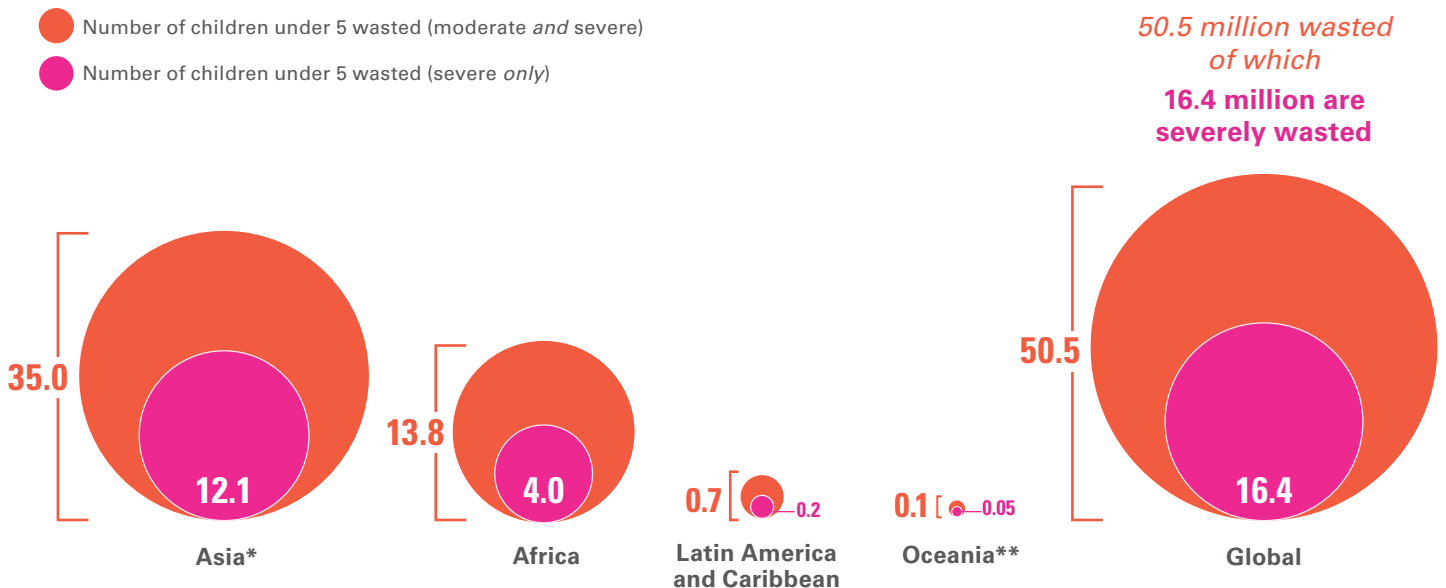


Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2018 edition. Note: \*Eastern Asia excluding Japan. \*\*Oceania excluding Australia and New Zealand. \*\*\*The Northern America sub-regional average based on United States data. There is no estimate available for the More Developed Region or for sub-regions of Europe or Australia and New Zealand. Aggregates may not add up due to rounding.

### Asia is home to the majority of children under 5 suffering from wasting and severe wasting

Number of wasted and severely wasted children under 5, by United Nations region, 2017

- Number of children under 5 wasted (moderate and severe)
- Number of children under 5 wasted (severe only)



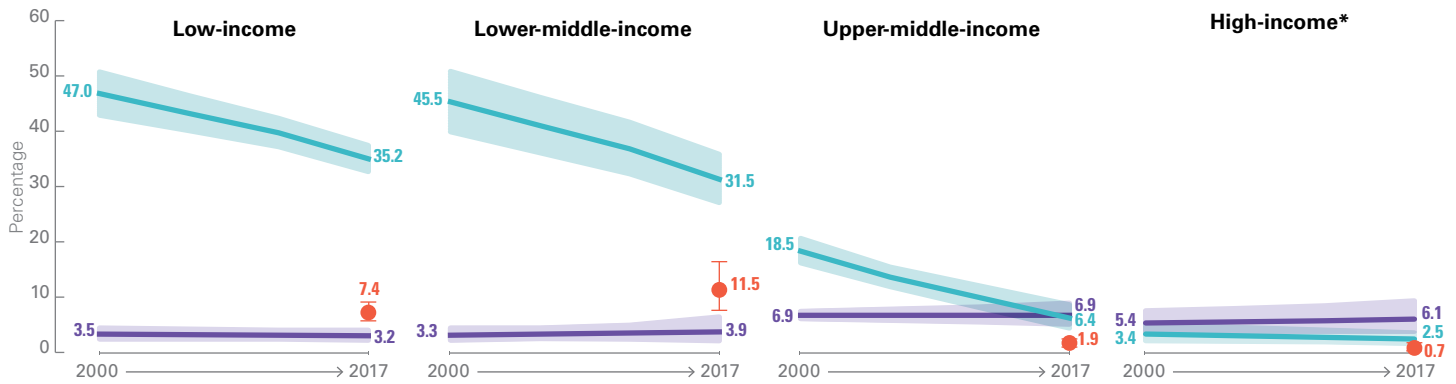
Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2018 edition. Note: \*Asia excluding Japan; \*\*Oceania excluding Australia and New Zealand.

# COUNTRY INCOME GROUPINGS



## Upper-middle-income countries have more than halved their stunting rates since 2000

Percentage of stunted, overweight and wasted children under 5, by country income classification, 2000 – 2017

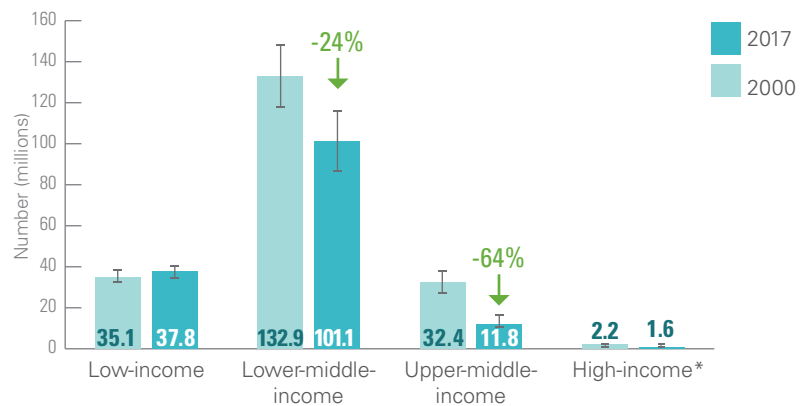


Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2018 edition. Note: \*High-income countries: low (<50 per cent) population coverage in all time periods.



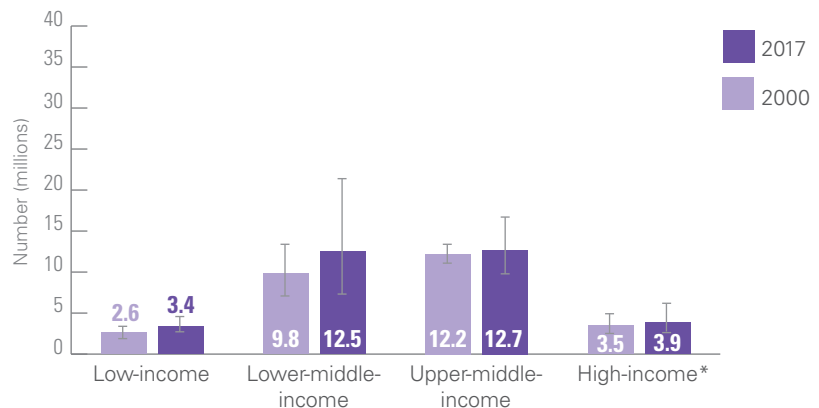
## Upper-middle-income countries have the largest relative declines in the number of stunted children of all income groups

Number of stunted children under 5, by country income classification, 2000 and 2017



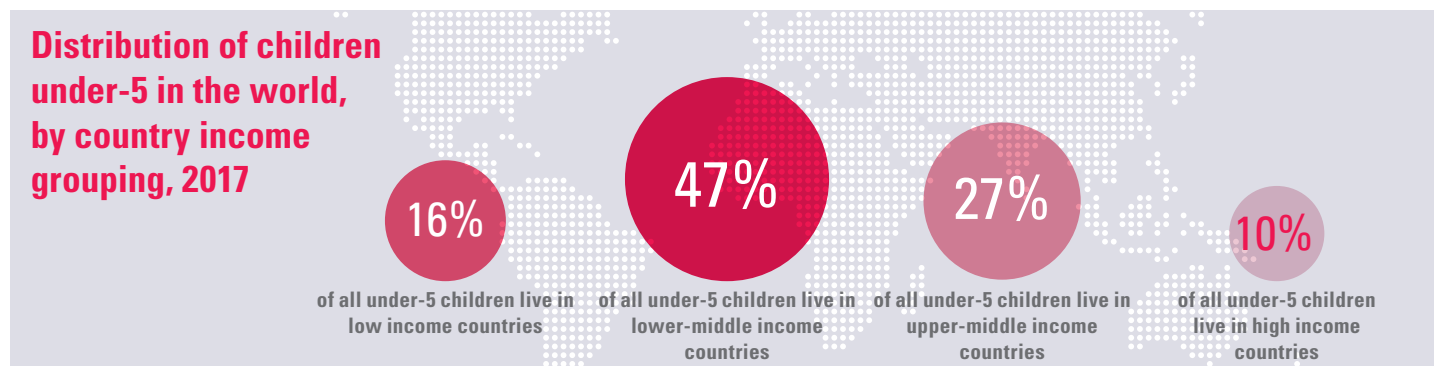
## The number of overweight children has increased the most in lower-middle-income countries

Number of overweight children under 5, by country income classification, 2000 and 2017

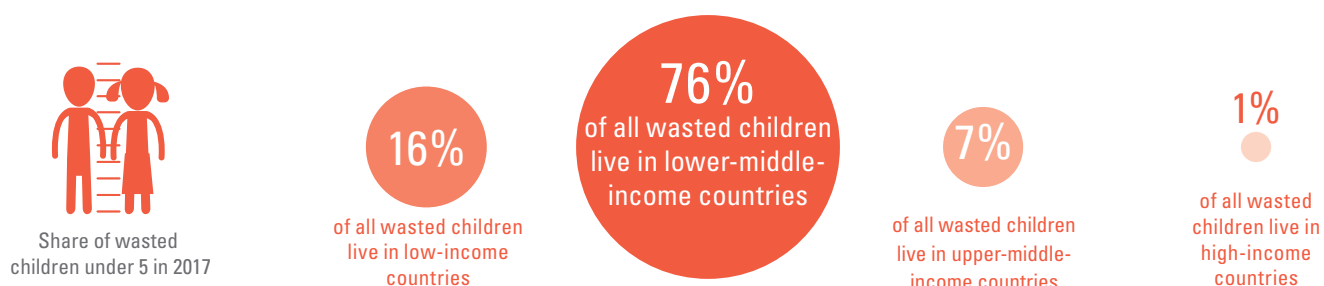
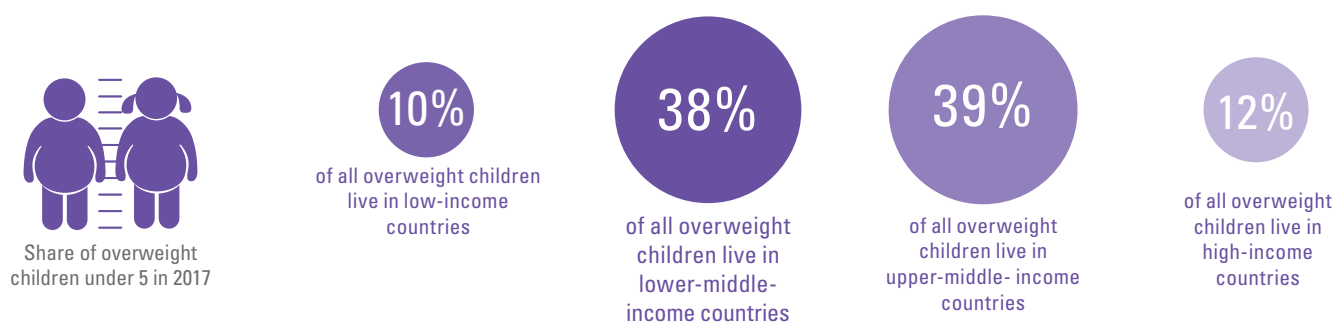
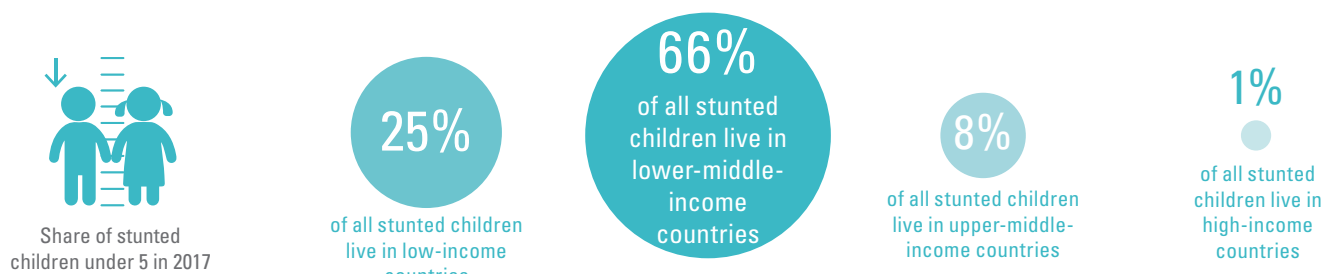


Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2018 edition. Note: \*High-income countries: low (<50 per cent) population coverage in all time periods. Based on FY17 World Bank income classification. The values for "percentage change since 2000" are based on calculations using unrounded estimates and therefore might not match values calculated using the rounded estimates presented in this brochure.

While only about **half** of all children under-5 live in lower-middle income countries, **two-thirds** of all stunted children and **three-quarters** of all wasted children live there



### Distribution of children under 5 affected by stunting, overweight and wasting in 2017



# PREVALENCE ESTIMATES TABLES\*

	Stunting		Overweight		Wasting and Severe Wasting	
	2000	2017	2000	2017	2017	2017
	% stunted (moderate and severe)	% stunted (moderate and severe)	% overweight (moderate and severe)	% overweight (moderate and severe)	% wasted (moderate and severe)	% wasted (severe)
<b>Global</b>	32.6 [30.9-34.2]	22.2 [20.5-24.0]	4.9 [4.4-5.5]	5.6 [4.7-6.6]	7.5 [6.4-8.5]	2.4 [1.9-2.9]
<b>United Nations</b>						
<b>Less Developed Regions<sup>1</sup></b>	35.9 [34.2-37.7]	24.3 [22.4-26.2]	4.5 [4.0-5.0]	5.1 [4.2-6.0]	8.1 [7.0-9.3]	2.7 [2.1-3.3]
<b>Africa</b>	38.3 [36.0-40.6]	30.3 [28.0-32.6]	5.0 [4.1-5.9]	5.0 [3.7-6.3]	7.1 [6.0-8.2]	2.1 [1.7-2.5]
<i>Eastern Africa</i>	45.7 [41.2-50.3]	35.6 [31.9-39.5]	4.7 [3.7-5.9]	4.4 [3.6-5.4]	6.0 [4.3-8.4]	1.5 [1.1-2.1]
<i>Middle Africa</i>	40.2 [34.7-45.9]	32.1 [27.3-37.4]	4.4 [2.9-6.6]	4.7 [3.5-6.4]	7.1 [5.5-9.2]	2.0 [1.4-2.8]
<i>Northern Africa</i>	23.8 [17.6-31.5]	17.3 [11.4-25.5]	8.2 [4.6-14.3]	10.3 [4.5-21.8]	8.1 [4.5-14.4]	3.7 [2.1-6.4]
<i>Southern Africa</i>	33.1 [29.0-37.5]	29.1 [25.6-32.9]	10.3 [7.3-14.2]	13.7 [9.9-18.7]	4.0 [2.7-5.8]	0.8 [0.6-1.0]
<i>Western Africa</i>	36.9 [33.9-40.1]	29.9 [25.7-34.4]	3.2 [2.4-4.1]	2.4 [1.9-3.1]	8.1 [7.1-9.3]	2.1 [1.6-2.7]
<b>Asia<sup>2</sup></b>	38.1 [35.6-40.7]	23.2 [20.2-26.1]	3.9 [3.3-4.6]	4.8 [3.5-6.2]	9.7 [7.8-11.6]	3.4 [2.4-4.3]
<i>Central Asia</i>	28.0 [21.3-35.7]	11.8 [9.2-15.0]	8.9 [5.3-14.6]	10.7 [6.0-18.1]	3.7 [3.1-4.3]	1.4 [0.9-2.0]
<i>Eastern Asia<sup>2</sup></i>	19.2 [17.8-20.6]	5.3 [4.9-5.8]	6.2 [5.5-7.0]	5.2 [4.4-6.3]	1.8 [1.7-1.9]	0.4 [0.4-0.5]
<i>Southern Asia</i>	49.6 [45.2-54.1]	33.3 [28.1-38.9]	2.5 [1.6-4.0]	3.1 [1.6-5.7]	15.3 [11.9-19.3]	5.0 [3.8-6.6]
<i>South-eastern Asia</i>	38.4 [32.6-44.5]	25.7 [19.6-32.9]	3.2 [2.5-3.9]	7.3 [3.9-13.3]	8.7 [6.4-11.8]	4.3 [1.6-10.9]
<i>Western Asia</i>	23.3 [16.1-32.4]	15.2 [7.9-27.3]	6.7 [4.8-9.2]	8.2 [3.1-19.7]	3.9 [1.2-11.6]	1.1 [0.3-3.9]
<b>Latin American and Caribbean</b>	16.9 [13.4-20.4]	9.6 [6.5-12.7]	6.8 [5.8-7.8]	7.3 [6.5-8.0]	1.3 [0.9-1.7]	0.3 [0.2-0.4]
<i>Caribbean</i>	15.0 [7.5-28.0]	8.0 [3.6-16.8]	5.3 [4.0-6.8]	7.2 [4.3-11.9]	3.2 [1.9-5.2]	1.2 [0.7-1.8]
<i>Central America</i>	23.9 [16.9-32.6]	14.1 [9.3-20.8]	5.7 [4.6-7.1]	6.4 [5.8-7.0]	0.9 [0.7-1.1]	0.2 [0.2-0.3]
<i>South America</i>	13.8 [10.3-18.2]	7.5 [4.4-12.7]	7.5 [6.2-9.1]	7.7 [6.7-8.9]	1.3 [0.8-2.2]	0.3 [0.2-0.4]
<b>Oceania<sup>3</sup></b>	36.8 [19.8-57.9]	38.1 [21.3-58.2]	4.7 [3.3-6.6]	8.7 [5.5-13.6]	9.2 [5.8-14.3]	3.3 [1.4-7.8]
<b>More Developed Regions</b>	-	-	-	-	-	-
Australia and New Zealand <sup>4</sup>	0.8	-	7.8	-	-	-
Europe	-	-	-	-	-	-
Northern America <sup>4</sup>	3.0	2.3	6.6 [6.4-7.0]	7.9 [7.6-8.3]	0.5	0.0
<b>UNICEF</b>						
East Asia and Pacific	24.5 [17.2-33.8]	9.0 [4.2-18.2]	5.2 [3.6-7.2]	5.7 [4.4-7.3]	3.0 [1.5-6.2]	0.9 [0.3-2.5]
Europe and Central Asia	-	-	-	-	-	-
<i>Eastern Europe and Central Asia</i>	18.6 [14.8-23.2]	8.5 [6.8-10.7]	8.2 [5.9-11.5]	14.8 [12.3-17.8]	1.7 [0.8-3.3]	0.6 [0.2-1.4]
<i>Western Europe</i>	-	-	-	-	-	-
Latin America and Caribbean	16.9 [13.4-20.4]	9.6 [6.5-12.7]	6.8 [5.8-7.8]	7.3 [6.5-8.0]	1.3 [0.9-1.7]	0.3 [0.2-0.4]
Middle East and North Africa	22.9 [17.3-29.7]	15.0 [9.2-23.5]	8.9 [6.4-12.3]	10.9 [6.0-19.1]	7.6 [5.0-11.5]	3.2 [1.9-5.5]
North America	3.0	2.3	6.6 [6.4-7.0]	7.9 [7.6-8.3]	0.5	0.0
South Asia	51.3 [49.7-53.0]	35.0 [32.5-37.6]	2.5 [1.5-4.0]	3.0 [1.6-5.4]	15.9 [13.2-19.1]	5.1 [4.0-6.6]
Sub-Saharan Africa	43.3 [39.9-46.7]	33.9 [31.9-35.9]	4.4 [3.5-5.2]	3.7 [2.9-4.5]	7.7 [6.5-8.8]	2.2 [1.8-2.6]
<i>East and Southern Africa</i>	45.3 [39.7-51.1]	34.1 [31.9-36.3]	4.5 [3.4-6.0]	4.3 [3.0-6.1]	6.3 [4.5-8.6]	1.7 [1.2-2.4]
<i>West and Central Africa</i>	41.1 [37.8-44.4]	33.7 [30.5-37.1]	4.3 [3.3-5.4]	3.0 [2.5-3.7]	9.0 [8.1-10.1]	2.7 [2.2-3.5]
<b>WHO</b>						
African Region	42.6 [38.9-46.4]	33.6 [31.0-36.3]	4.6 [3.8-5.5]	3.7 [2.8-4.7]	7.0 [5.7-8.6]	2.0 [1.5-2.7]
Region of the Americas	11.0 [5.5-20.5]	6.3 [3.4-11.5]	6.9 [6.2-7.6]	7.2 [6.6-8.0]	0.9 [0.6-1.4]	0.1 [0.0-0.5]
South-East Asia Region	49.6 [45.7-53.4]	33.0 [28.3-38.0]	2.4 [1.5-4.1]	3.4 [1.6-7.3]	15.2 [12.0-19.1]	5.0 [3.7-6.6]
Eastern Mediterranean Region	33.7 [24.5-44.4]	24.6 [15.5-36.5]	6.1 [4.3-8.7]	6.8 [4.2-10.7]	9.1 [7.1-11.7]	3.9 [2.9-5.2]
Europe Region	-	-	-	-	-	-
Western Pacific Region	20.8 [17.0-25.2]	6.9 [4.1-11.2]	5.5 [4.1-7.4]	5.3 [4.8-5.9]	2.3 [1.5-3.4]	0.5 [0.3-0.8]
<b>World Bank Income</b>						
Low income	47.0 [43.1-50.9]	35.2 [32.9-37.6]	3.5 [2.6-4.6]	3.2 [2.4-4.2]	7.4 [5.9-9.3]	2.0 [1.5-2.6]
Middle income	35.4 [31.9-38.9]	22.4 [19.5-25.3]	4.7 [4.0-5.4]	5.0 [3.5-6.5]	8.0 [5.2-10.8]	2.7 [1.7-3.6]
<i>Lower-middle income</i>	45.5 [40.1-51.0]	31.5 [27.3-36.0]	3.3 [2.4-4.6]	3.9 [2.3-6.6]	11.5 [7.8-16.6]	3.9 [2.7-5.6]
<i>Upper middle income</i>	18.5 [16.4-20.8]	6.4 [4.6-8.8]	6.9 [6.3-7.6]	6.9 [5.3-9.1]	1.9 [1.6-2.2]	0.5 [0.4-0.6]
High income	3.4 [2.2-5.2]	2.5 [1.7-3.6]	5.4 [3.9-7.6]	6.1 [3.9-9.4]	0.7 [0.4-1.5]	0.0 [0.0-0.1]
<b>World Bank Regions</b>						
East Asia and Pacific	24.6 [19.4-29.8]	12.2 [7.9-16.4]	4.8 [4.5-5.2]	6.0 [4.0-7.9]	4.0 [2.5-5.6]	1.6 [0.1-3.2]
Europe and Central Asia	-	-	-	-	-	-
Latin America and Caribbean	16.9 [13.4-20.4]	9.6 [6.5-12.7]	6.8 [5.8-7.8]	7.3 [6.5-8.0]	1.3 [0.9-1.7]	0.3 [0.2-0.4]
Middle East and North Africa	22.8 [17.2-29.6]	15.0 [9.2-23.5]	8.9 [6.4-12.3]	10.9 [6.0-19.1]	7.6 [5.0-11.5]	3.2 [1.9-5.5]
North America <sup>4</sup>	3.0	2.3	6.6 [6.4-7.0]	7.9 [7.6-8.3]	0.5	0.0
South Asia	51.3 [49.7-53.0]	35.0 [32.5-37.6]	2.5 [1.5-4.0]	3.0 [1.7-5.4]	15.9 [13.2-19.1]	5.1 [4.0-6.6]
Sub-Saharan Africa	43.2 [39.9-46.5]	34.1 [32.1-36.2]	4.4 [3.7-5.3]	3.5 [2.8-4.4]	7.5 [6.2-9.1]	2.2 [1.7-2.9]

## Footnotes

1. Only Less Developed Regions are displayed, while the aggregates of the More Developed Regions are not displayed due to insufficient population coverage.

2. Asia excluding Japan; Eastern Asia excluding Japan.

3. Oceania excluding Australia and New Zealand.

4. For stunting, wasting and severe wasting estimates, the Northern America regional average is based only on United States data; and the Australia and New Zealand average is based only on Australian data; hence confidence intervals are not available.

5. Consecutive low population coverage; interpret with caution.

# NUMBER (MILLIONS) AFFECTED TABLES\*

	Stunting		Overweight		Wasting and Severe Wasting	
	2000	2017	2000	2017	2017	2017
	number (millions) stunted (moderate and severe)	number (millions) stunted (moderate and severe)	number (millions) overweight (moderate and severe)	number (millions) overweight (moderate and severe)	number (millions) wasted (moderate and severe)	number (millions) wasted (severe)
	footnote	footnote	footnote	footnote	footnote	footnote
<b>Global</b>	<b>198.4 [188.5-208.3]</b>	<b>150.8 [139.0-162.6]</b>	<b>30.1 [26.7-33.6]</b>	<b>38.3 [32.1-44.4]</b>	<b>50.5 [43.4-57.7]</b>	<b>16.4 [12.9-19.9]</b>
<b>United Nations</b>						
<b>Less Developed Regions<sup>1</sup></b>	195.3 [185.7-204.9]	148.0 [136.3-159.6]	24.4 [21.8-27.1]	31.2 [25.7-36.7]	49.6 [42.5-56.7]	16.3 [12.8-19.8]
<b>Africa</b>	50.6 [47.6-53.7]	58.7 [54.3-63.2]	6.6 [5.4-7.8]	9.7 [7.2-12.2]	13.8 [11.7-15.9]	4.0 [3.2-4.8]
<i>Eastern Africa</i>	21.5 [19.3-23.7]	23.9 [21.4-26.5]	2.2 [1.7-2.8]	3.0 [2.4-3.6]	4.0 [2.9-5.6]	1.0 [0.7-1.4]
<i>Middle Africa</i>	7.1 [6.1-8.1]	9.3 [7.9-10.8]	0.8 [0.5-1.2]	1.4 [1.0-1.9]	2.1 [1.6-2.7]	0.6 [0.4-0.8]
<i>Northern Africa</i>	4.9 [3.6-6.5]	5.0 [3.3-7.3]	1.7 [1.0-2.9]	3.0 [1.3-6.3]	2.3 [1.3-4.1]	1.1 [0.6-1.8]
<i>Southern Africa</i>	2.0 [1.8-2.3]	2.0 [1.7-2.2]	0.6 [0.4-0.9]	0.9 [0.7-1.3]	0.3 [0.2-0.4]	0.1 [0.0-0.1]
<i>Western Africa</i>	15.1 [13.9-16.4]	18.6 [16.0-21.5]	1.3 [1.0-1.7]	1.5 [1.2-1.9]	5.1 [4.4-5.8]	1.3 [1.0-1.7]
<b>Asia<sup>2</sup></b>	134.6 [125.7-143.5]	83.6 [72.9-94.2]	13.9 [11.6-16.2]	17.5 [12.6-22.4]	35.0 [28.2-41.8]	12.1 [8.7-15.5]
<i>Central Asia</i>	1.6 [1.3-2.1]	0.9 [0.7-1.2]	0.5 [0.3-0.9]	0.8 [0.5-1.4]	0.3 [0.2-0.3]	0.1 [0.1-0.2]
<i>Eastern Asia<sup>2</sup></i>	17.1 [15.8-18.3]	4.8 [4.4-5.3]	5.5 [4.9-6.2]	4.8 [4.0-5.7]	1.7 [1.6-1.7]	0.4 [0.4-0.4]
<i>Southern Asia</i>	89.5 [81.5-97.5]	58.7 [49.5-68.7]	4.6 [2.9-7.2]	5.4 [2.9-10.1]	26.9 [21.1-34.1]	8.8 [6.6-11.6]
<i>South-eastern Asia</i>	21.0 [17.8-24.3]	14.9 [11.4-19.1]	1.7 [1.4-2.1]	4.2 [2.2-7.7]	5.1 [3.7-6.9]	2.5 [0.9-6.3]
<i>Western Asia</i>	5.4 [3.7-7.5]	4.2 [2.2-7.6]	1.5 [1.1-2.1]	2.3 [0.9-5.5]	1.1 [0.3-3.2]	0.3 [0.1-1.1]
<b>Latin American and Caribbean</b>	9.7 [7.7-11.6]	5.1 [3.5-6.8]	3.9 [3.3-4.5]	3.9 [3.5-4.3]	0.7 [0.5-0.9]	0.2 [0.1-0.2]
<i>Caribbean</i>	0.6 [0.3-1.1]	0.3 [0.1-0.6]	0.2 [0.2-0.3]	0.3 [0.2-0.4]	0.1 [0.1-0.2]	0.0 [0.0-0.1]
<i>Central America</i>	4.1 [2.9-5.6]	2.3 [1.5-3.4]	1.0 [0.8-1.2]	1.0 [1.0-1.2]	0.1 [0.1-0.2]	0.0 [0.0-0.0]
<i>South America</i>	5.0 [3.7-6.6]	2.5 [1.5-4.2]	2.7 [2.2-3.3]	2.6 [2.2-3.0]	0.4 [0.3-0.7]	0.1 [0.1-0.1]
<b>Oceania<sup>3</sup></b>	0.4 [0.2-0.7]	0.5 [0.3-0.8]	0.1 [0.0-0.1]	0.1 [0.1-0.2]	0.1 [0.1-0.2]	0.0 [0.0-0.1]
<b>More Developed Regions</b>	-	-	-	-	-	-
Australia and New Zealand <sup>4</sup>	0.0	-	0.2	-	-	-
Europe	-	-	-	-	-	-
Northern America <sup>4</sup>	0.7	0.5	1.4 [1.4-1.5]	1.7 [1.6-1.8]	0.1	0.0
<b>UNICEF</b>						
East Asia and Pacific	36.8 [25.9-50.8]	14.0 [6.5-28.4]	7.7 [5.5-10.9]	8.9 [6.9-11.4]	4.7 [2.3-9.6]	1.4 [0.5-3.9]
Europe and Central Asia	-	-	-	-	-	-
<i>Eastern Europe and Central Asia</i>	3.6 [2.9-4.5]	1.8 [1.5-2.3]	1.6 [1.1-2.2]	3.2 [2.6-3.8]	0.4 [0.2-0.7]	0.1 [0.0-0.3]
<i>Western Europe</i>	-	-	-	-	-	-
Latin America and Caribbean	9.7 [7.7-11.6]	5.1 [3.5-6.8]	3.9 [3.3-4.5]	3.9 [3.5-4.3]	0.7 [0.5-0.9]	0.2 [0.1-0.2]
Middle East and North Africa	8.6 [6.5-11.1]	7.4 [4.5-11.5]	3.3 [2.4-4.6]	5.3 [2.9-9.4]	3.7 [2.4-5.6]	1.6 [0.9-2.7]
North America	0.7	0.5	1.4 [1.4-1.5]	1.7 [1.6-1.8]	0.1	0.0
South Asia	89.2 [86.4-92.2]	59.4 [55.2-63.8]	4.3 [2.7-6.9]	5.1 [2.8-9.2]	27.0 [22.4-32.3]	8.7 [6.8-11.2]
Sub-Saharan Africa	50.3 [46.4-54.3]	57.9 [54.6-61.3]	5.1 [4.1-6.1]	6.3 [4.9-7.7]	13.1 [11.2-15.0]	3.8 [3.1-4.5]
<i>East and Southern Africa</i>	27.6 [24.1-31.1]	29.0 [27.2-30.9]	2.7 [2.0-3.7]	3.7 [2.6-5.2]	5.3 [3.8-7.3]	1.5 [1.0-2.0]
<i>West and Central Africa</i>	22.8 [21.0-24.6]	28.9 [26.2-31.8]	2.4 [1.9-3.0]	2.6 [2.1-3.1]	7.8 [6.9-8.7]	2.4 [1.9-3.0]
<b>WHO</b>						
African Region	48.0 [43.8-52.3]	56.1 [51.8-60.5]	5.2 [4.3-6.2]	6.1 [4.7-7.9]	11.7 [9.5-14.4]	3.4 [2.5-4.5]
Region of the Americas	8.6 [4.3-16.0]	4.7 [2.5-8.6]	5.4 [4.9-5.9]	5.4 [4.9-6.0]	0.6 [0.4-1.0]	0.1 [0.0-0.3]
South-East Asia Region	90.7 [83.7-97.7]	57.4 [49.4-66.1]	4.5 [2.7-7.4]	6.0 [2.7-12.8]	26.5 [20.8-33.4]	8.7 [6.5-11.5]
Eastern Mediterranean Region	21.6 [15.7-28.4]	20.2 [12.8-30.0]	3.9 [2.8-5.5]	5.5 [3.4-8.8]	7.5 [5.8-9.6]	3.2 [2.4-4.3]
Europe Region	-	-	-	-	-	-
Western Pacific Region	24.4 [19.9-29.6]	8.3 [5.0-13.6]	6.5 [4.8-8.7]	6.5 [5.8-7.2]	2.7 [1.8-4.2]	0.6 [0.4-1.0]
<b>World Bank Income</b>						
Low income	35.1 [32.2-38.0]	37.8 [35.3-40.3]	2.6 [2.0-3.4]	3.4 [2.6-4.5]	7.9 [6.3-9.9]	2.1 [1.6-2.7]
Middle income	165.3 [148.9-181.7]	112.8 [98.3-127.4]	21.9 [18.7-25.2]	25.2 [17.6-32.7]	40.4 [26.5-54.3]	13.4 [8.8-18.0]
<i>Lower-middle income</i>	133.0 [117.2-149.0]	101.1 [87.6-115.6]	9.8 [7.1-13.4]	12.5 [7.2-21.3]	37.0 [25.2-53.4]	12.5 [8.6-18.1]
<i>Upper middle income</i>	32.4 [28.6-36.5]	11.8 [8.5-16.2]	12.2 [11.1-13.4]	12.7 [9.7-16.6]	3.4 [2.8-4.1]	0.9 [0.7-1.1]
High income	2.2 [1.4-3.4]	1.6 [1.1-2.3]	3.5 [2.5-4.9]	3.9 [2.5-6.1]	0.5 [0.2-1.0]	0.0 [0.0-0.1]
<b>World Bank Regions</b>						
East Asia and Pacific	37.1 [29.3-44.9]	18.9 [12.3-25.5]	7.3 [6.7-7.8]	9.3 [6.3-12.3]	6.3 [3.9-8.7]	2.5 [0.1-4.9]
Europe and Central Asia	-	-	-	-	-	-
Latin America and Caribbean	9.7 [7.7-11.6]	5.1 [3.5-6.8]	3.9 [3.3-4.5]	3.9 [3.5-4.3]	0.7 [0.5-0.9]	0.2 [0.1-0.2]
Middle East and North Africa	8.6 [6.5-11.1]	7.4 [4.5-11.6]	3.4 [2.4-4.6]	5.4 [2.9-9.4]	3.8 [2.5-5.6]	1.6 [0.9-2.7]
North America <sup>4</sup>	0.7	0.5	1.4 [1.4-1.5]	1.7 [1.6-1.8]	0.1	0.0
South Asia	89.3 [86.4-92.1]	59.4 [55.1-63.8]	4.3 [2.6-7.0]	5.1 [2.8-9.1]	27.0 [22.4-32.4]	8.7 [6.8-11.2]
Sub-Saharan Africa	50.1 [46.3-54.0]	58.3 [54.8-61.9]	5.1 [4.3-6.1]	6.0 [4.7-7.5]	12.8 [10.6-15.5]	3.7 [2.8-4.9]

\*Complete data series for stunting and overweight (1990, 1995, 2000, 2005, 2010, 2011, 2012, 2013, 2014, 2015, 2016 and 2017) and the latest year for wasting (2017) estimates of prevalence and numbers affected can be found at the websites below for global as well as for the following country groupings: (i) United Nations regions and sub-regions; (ii) UNICEF; (iii) WHO; (iv) World Bank Income; (v) World Bank regions; (vi) SDG regions; and (vii) MDG regions. These websites also contain a file with the regional or income grouping compositions:

UNICEF <[data.unicef.org](http://data.unicef.org)> WHO <[www.who.int/nutgrowthdb/estimates](http://www.who.int/nutgrowthdb/estimates)> World Bank Group <[data.worldbank.org/child-malnutrition](http://data.worldbank.org/child-malnutrition)>

# NOTES ON THE DATA AND METHODOLOGY

## Strengths and weaknesses of malnutrition data

Prevalence estimates for stunting and overweight are relatively stable over the course of a calendar year. It is therefore possible to track global and regional changes in these two conditions over time.

Wasting and severe wasting are acute conditions that can change frequently and rapidly over the course of a calendar year. This makes it difficult to generate reliable trends over time with the input data available, and as such, this report provides only most recent global and regional estimates.

The joint global and regional estimates that make up the UNICEF/WHO/World Bank Group Joint Child Malnutrition Estimates have been generated using a country-level dataset which is mainly comprised of estimates from nationally representative household surveys. These data are collected infrequently (every 3 to 5 years in most countries) and measure malnutrition at one point in time (e.g. during one or several months of field work), making it difficult to capture the rapid fluctuations in wasting that can occur over the course of a given year. Incidence data (i.e. the number of new cases that occur during the calendar year) would allow for better tracking of changes over time; however, these data currently do not exist.

**The analysis methods and presentation have remained unchanged from the 2012 report<sup>1</sup>, except for minor refinements detailed below:**

### 1. Year assigned to each survey

When data collection begins in one calendar year and continues into the next, the survey year assigned is the one in which most of the fieldwork took place. For example, if a survey was conducted between 1 September 2009 and 28 February 2010, the year 2009 would be assigned, since the majority of data collection took place in that year (i.e., four months in 2009 versus two months in 2010). This method has been used since the 2013 edition (prior to that, the latter year was used by default – e.g., 2010 in the example above).

<sup>1</sup> United Nations Children's Fund, World Health Organization, The World Bank. UNICEF-WHO-World Bank Joint Child Malnutrition Estimates. (UNICEF, New York; WHO, Geneva; The World Bank, Washington, DC; 2012).

## 2. Final reports only

As of the 2014 edition, the country-level dataset used to generate the global and regional joint malnutrition estimates is based only on final survey results. Preliminary survey results are no longer included in the dataset since the data are sometimes retracted or change significantly when the final version is released.

## 3. Updated data sources

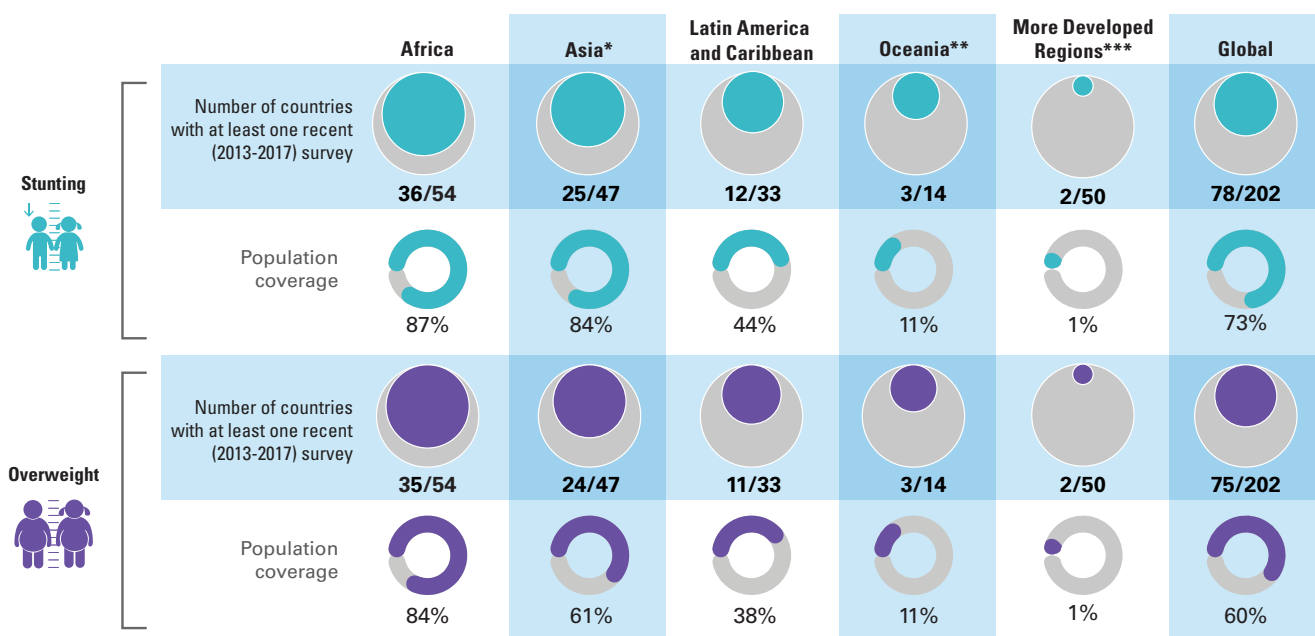
- i. The updated joint dataset includes:
  - 837 nationally representative surveys;
  - data from 150 countries and territories, representing more than 90 per cent of all children under 5 globally (population coverage varies by regions and periods). The majority of data available are from low- and middle-income countries – more efforts are needed to generate data from high-income countries.
- ii. The under 5 population estimates were based on The United Nations World Population Prospects, 2017 Revision. These were used as weighting factors for each country survey to derive the regional and global prevalence estimates and calculate the numbers affected.
- iii. Regional and country income classifications were based on FY18 World Bank income classification.

## 4. Footnotes on population coverage

As started in the 2014 edition, a separate exercise was conducted to assess population coverage. This was important in order to alert the reader, via footnotes, to instances where the data should be interpreted with caution due to low population coverage (defined as less than 50 per cent). A conservative method was applied looking at available data within mutually exclusive five-year periods around the projected years. Population coverage was calculated as:

$$\frac{\text{the sum of country five-year average populations for which surveys are available in the dataset}}{\text{the total of country five-year average population for all countries in the region}}$$

## Population coverage for the most recent period (2013-2017), by UN regions



Note: \* Asia excluding Japan; \*\*Oceania excluding Australia and New Zealand. \*\*\* The More Developed Region malnutrition estimates are not displayed in the brochure due to lack of adequate population coverage (<50 per cent) in all year ranges since 1990. Also note that figures for wasting are the same as for stunting and therefore not presented.

## 5. Prevalence thresholds for wasting, overweight and stunting in children under 5 years

New thresholds, presented in Table 1, were established through the WHO-UNICEF Technical Advisory Group on Nutrition Monitoring (TEAM)<sup>2</sup> and have been used for development of prevalence-based maps in this brochure. The thresholds were developed in relation to standard deviations (SD) of the normative WHO Child Growth Standards. The international definition of 'normal' (two SD from the WHO standards median) defines the first threshold, which includes 2.3% of the area under the normalized distribution. Multipliers of this "very low" level (rounded to 2.5%) set the basis to establish subsequent thresholds.

2 de Onis, Mercedes et al. (2018) Prevalence thresholds for wasting, overweight and stunting in children under 5 years. (Manuscript submitted for publication.)

Table 1. Prevalence thresholds and corresponding labels for stunting, overweight and wasting

Labels	Prevalence thresholds (%)	
	Stunting	Overweight and Wasting
Very low	< 2.5	< 2.5
Low	2.5 – < 10	2.5 – < 5
Medium	10 – < 20	5 – < 10
High	20 – < 30	10 – < 15
Very high	≥ 30%	≥ 15

## ONLINE MATERIALS

This key findings report of the 2018 edition of the Joint Malnutrition Estimates summarizes the new regional and global numbers and main messages for official United Nations data on child malnutrition.

- the latest country-level joint malnutrition dataset, a time series of all country estimates that were used to generate the joint child malnutrition global and regional estimates;
- the joint malnutrition global and regional estimates database by various regional groupings (e.g. United Nations, UNICEF, WHO, etc., regional groupings) and for more years than presented in this brochure;
- a reference document outlining the composition of the various regional groupings for which the joint estimates have been produced.

- interactive dashboards, which allow users to visualize and export the global and regional estimates for a number of regional groupings.

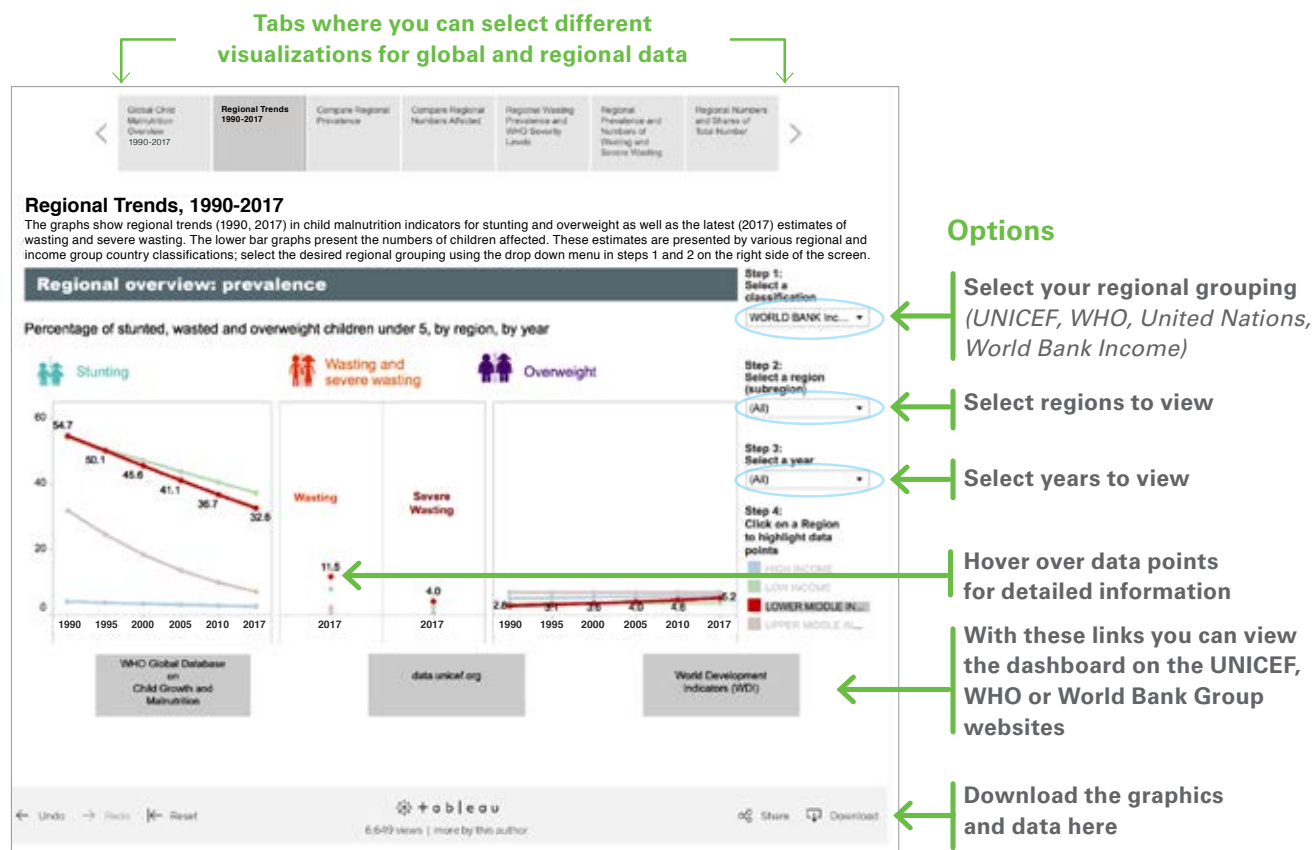
All of these materials can be downloaded from the links below:

UNICEF: <<https://data.unicef.org/resources/jme>>

WHO: <[www.who.int/nutgrowthdb/estimates](http://www.who.int/nutgrowthdb/estimates)>

World Bank Group: <[data.worldbank.org/child-malnutrition](http://data.worldbank.org/child-malnutrition)>

## DASHBOARD OVERVIEW



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<[data.unicef.org/nutrition](http://data.unicef.org/nutrition)>; <[www.who.int/nutgrowthdb](http://www.who.int/nutgrowthdb)>; <[data.worldbank.org](http://data.worldbank.org)>.



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