

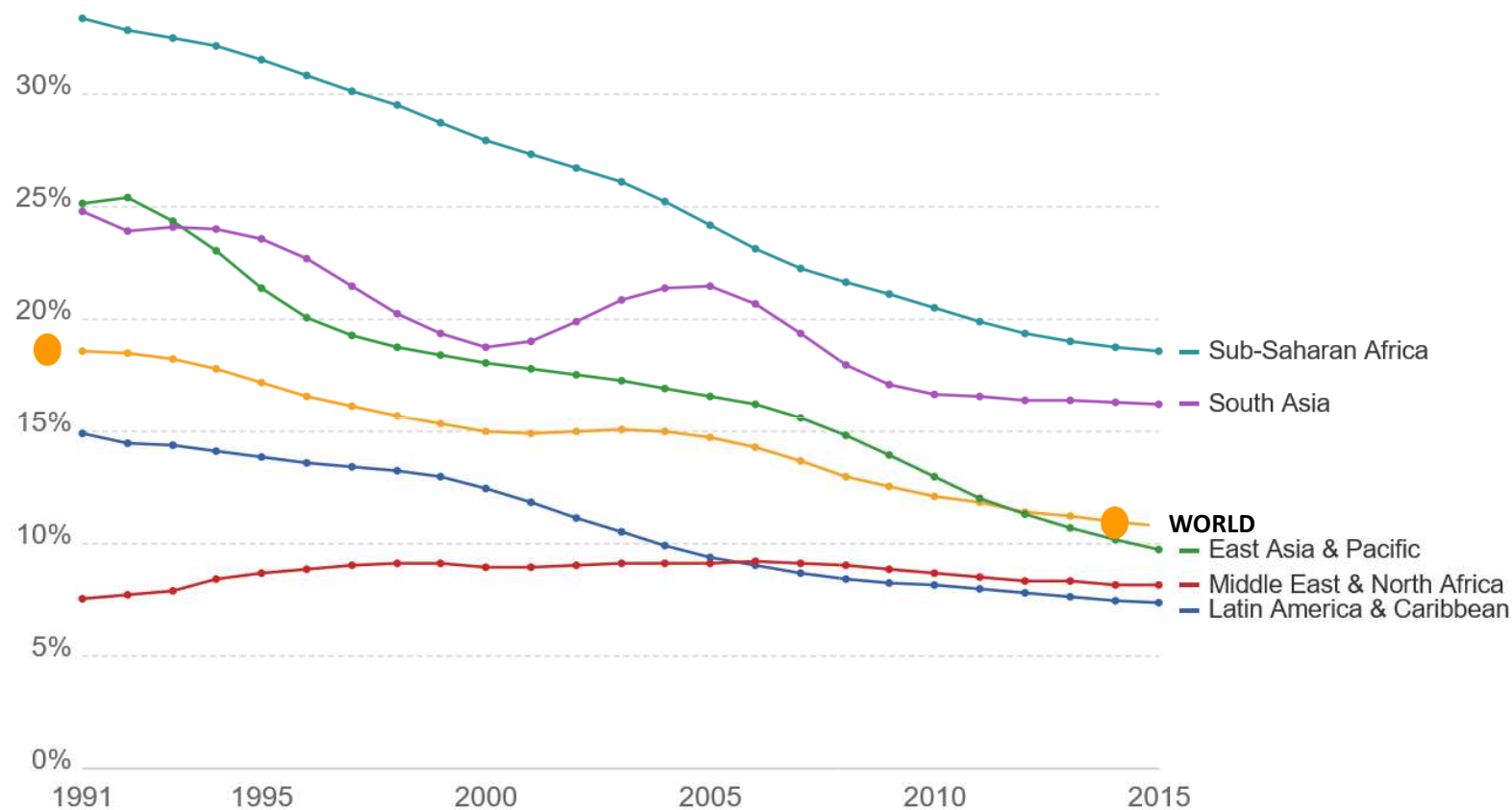
NUEVOS RETOS DE LA NUTRICION

Nutricion temprana: una prioridad para la sociedad

*Jose M. Saavedra, MD
Associate Professor of Pediatrics
Johns Hopkins University School of Medicine*

Share of the population that is undernourished

This is the main FAO hunger indicator. It measures the share of the population that has a caloric intake which is insufficient to meet the minimum energy requirements necessary for a given individual. Data showing as 5 may signify a prevalence of undernourishment below 5%.

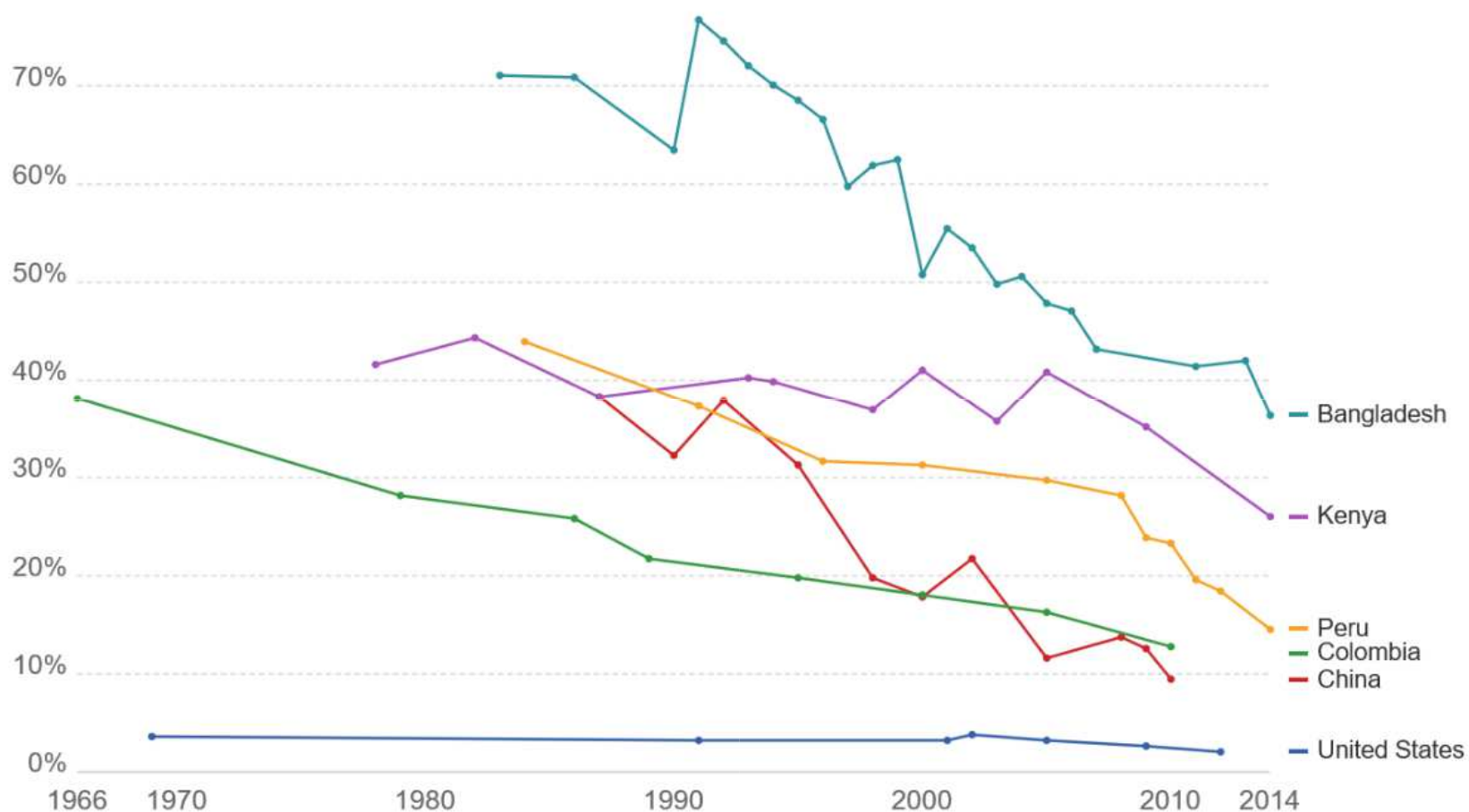


Source: UN Food and Agriculture Organization (FAO)

Note: Developed countries are not included in the regional estimates since the prevalence is below 5%.

Share of children younger than 5 who suffer from stunting

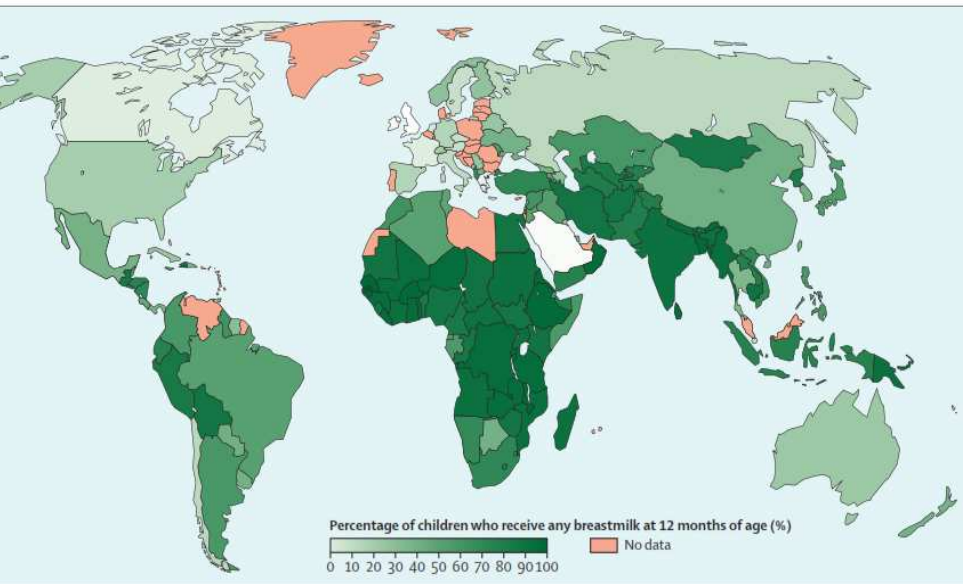
Share of children younger than 5 years that fall below two standard deviations from the median height-for-age of the WHO Child Growth Standards. When data for the indicated year is not available the closest observation is shown (within a tolerance of 5 years).



Source: World Bank – WDI

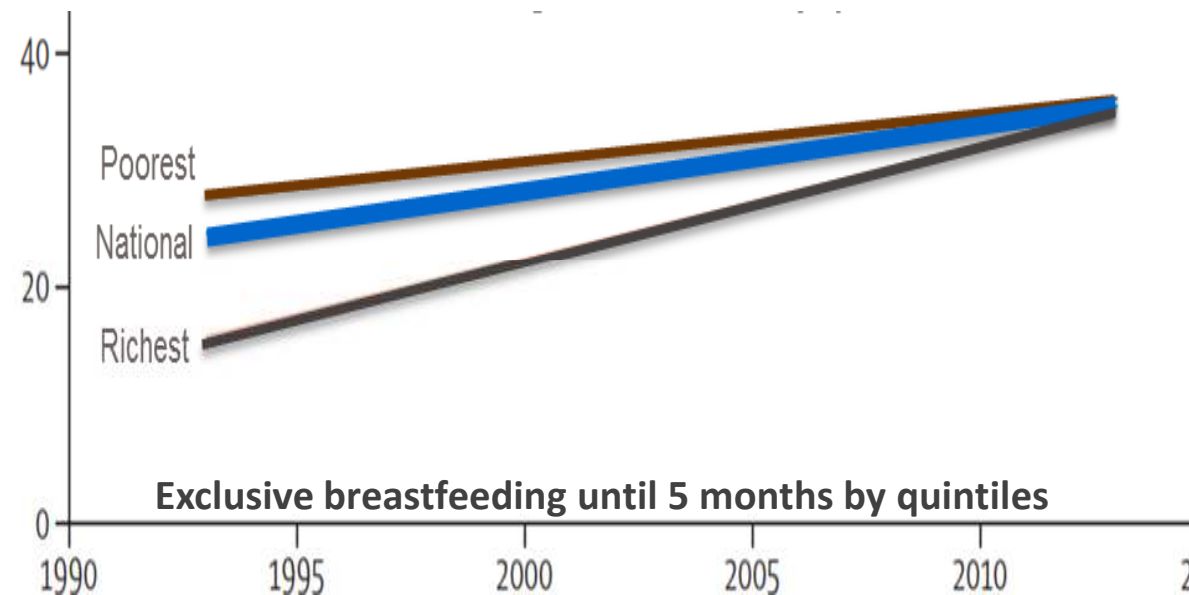
Breastfeeding rates are increasing globally

- Breastfeeding is more prolonged in LMICs



Breastfeeding at 12 months
Global distribution

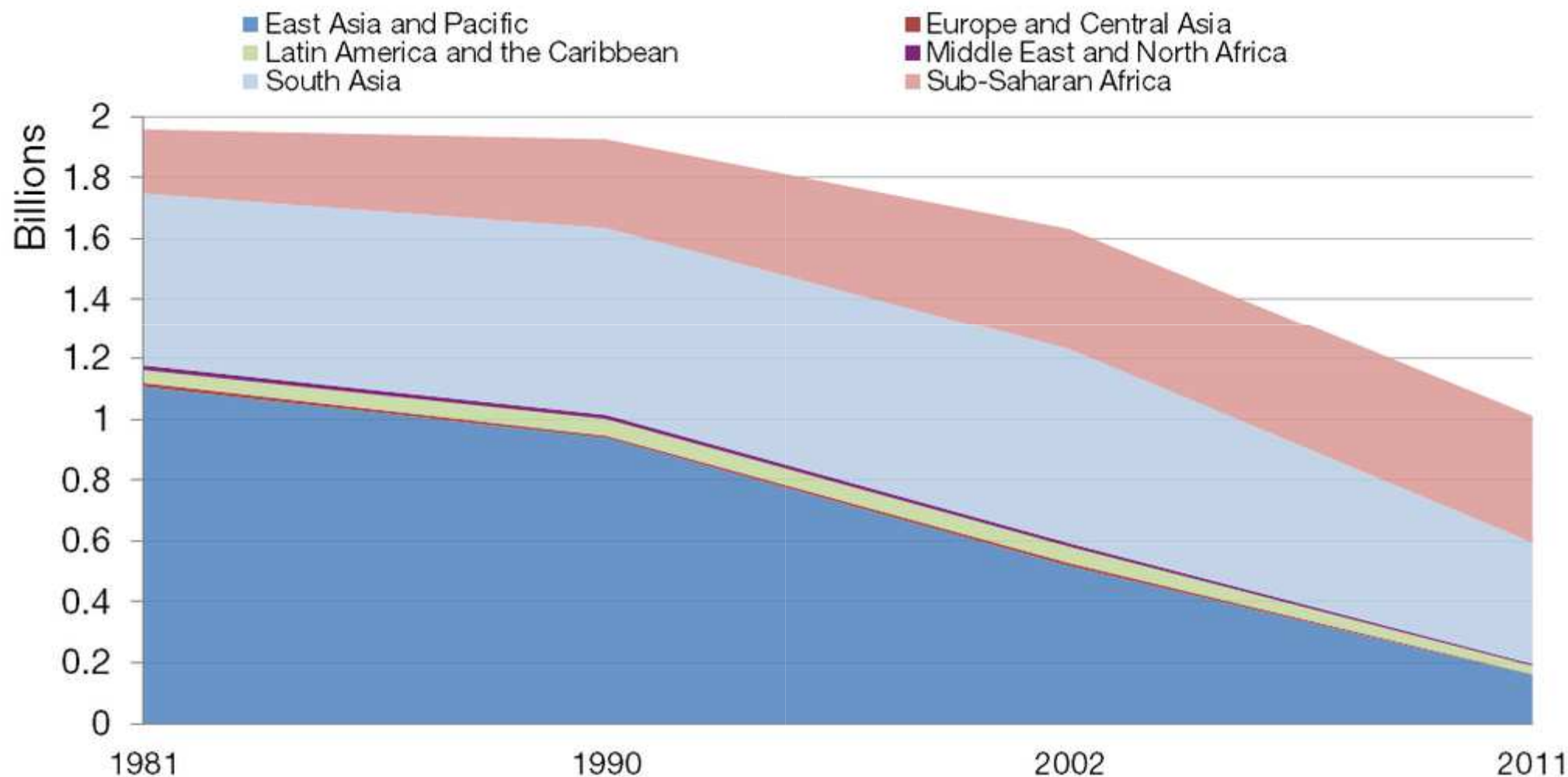
- But fastest rates of increase are in the richer strata



National Rates and and Wealth Related Rates of
Breastfeeding 1993 -2013

The number of people living in extreme poverty, 1981-2011

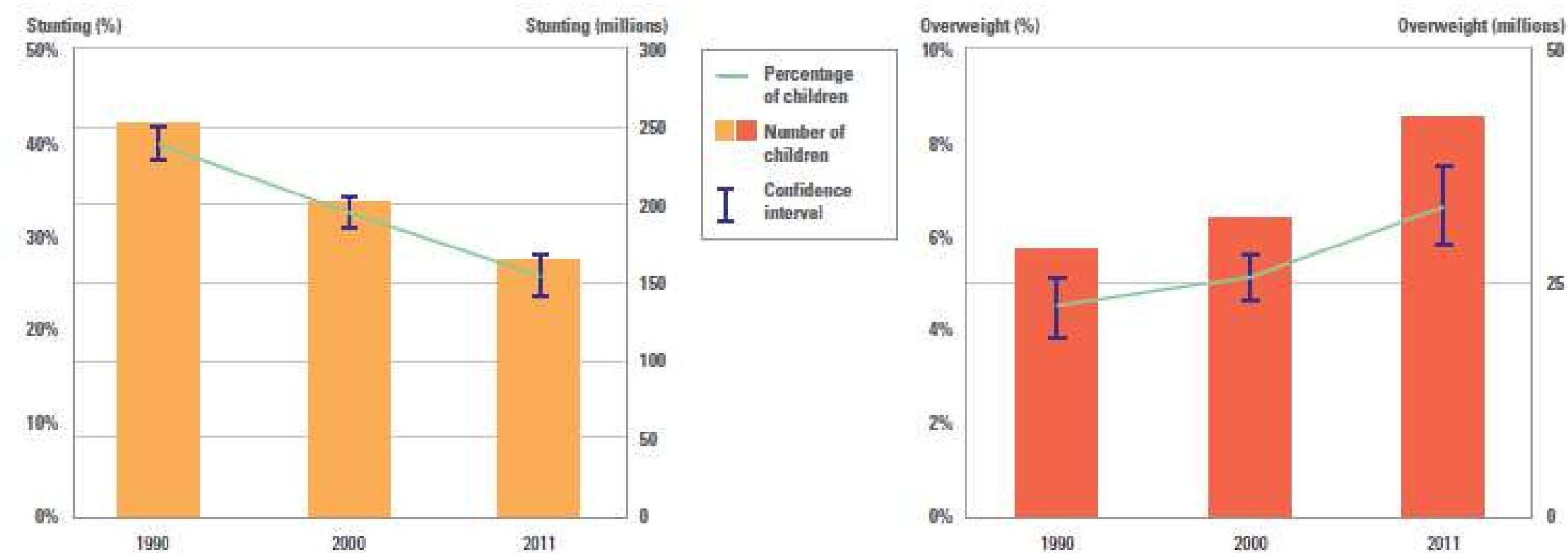
"Extreme poverty" is living on less than \$1.25 USD per day in 2005 International Dollar



Source: World Bank, Our World in Data

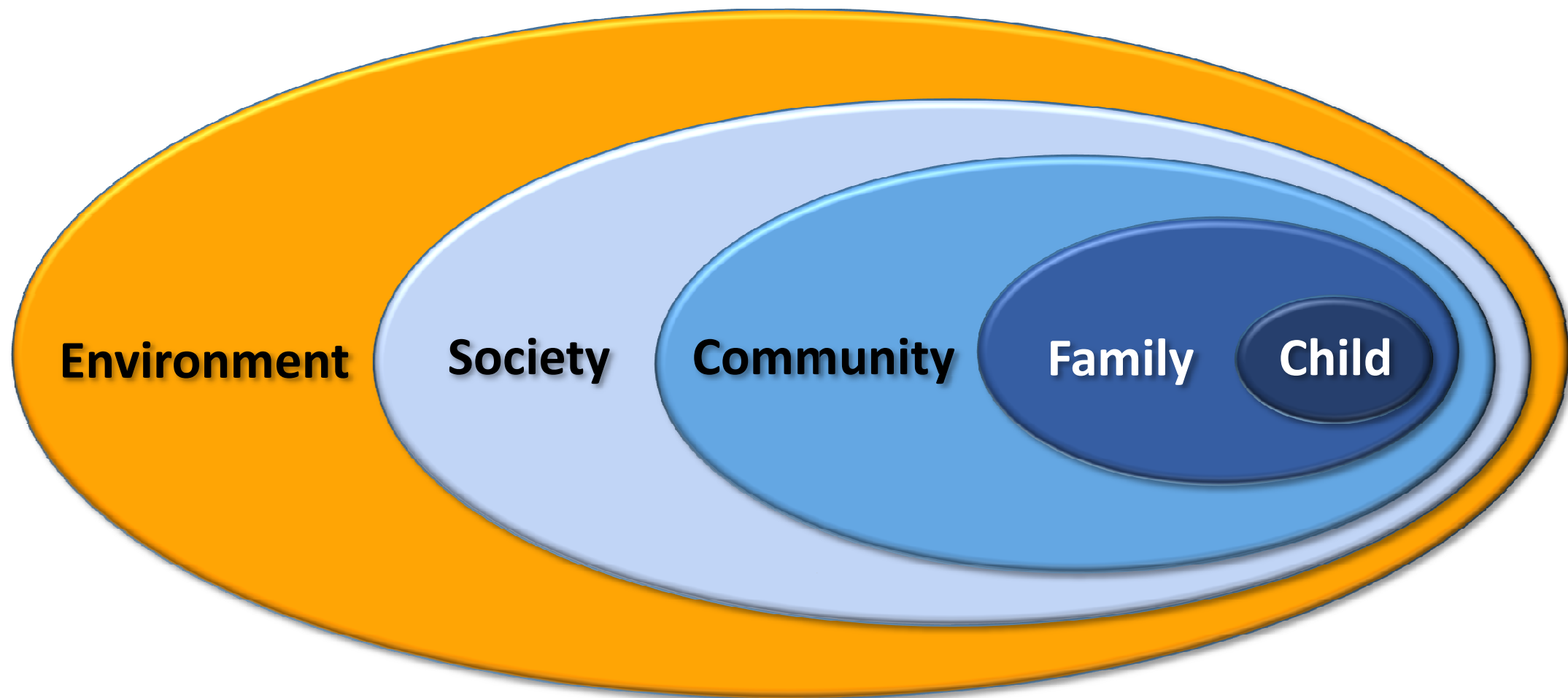
Stunting and overweight in children under 5 years of age

The Double Burden of Obesity and Malnutrition

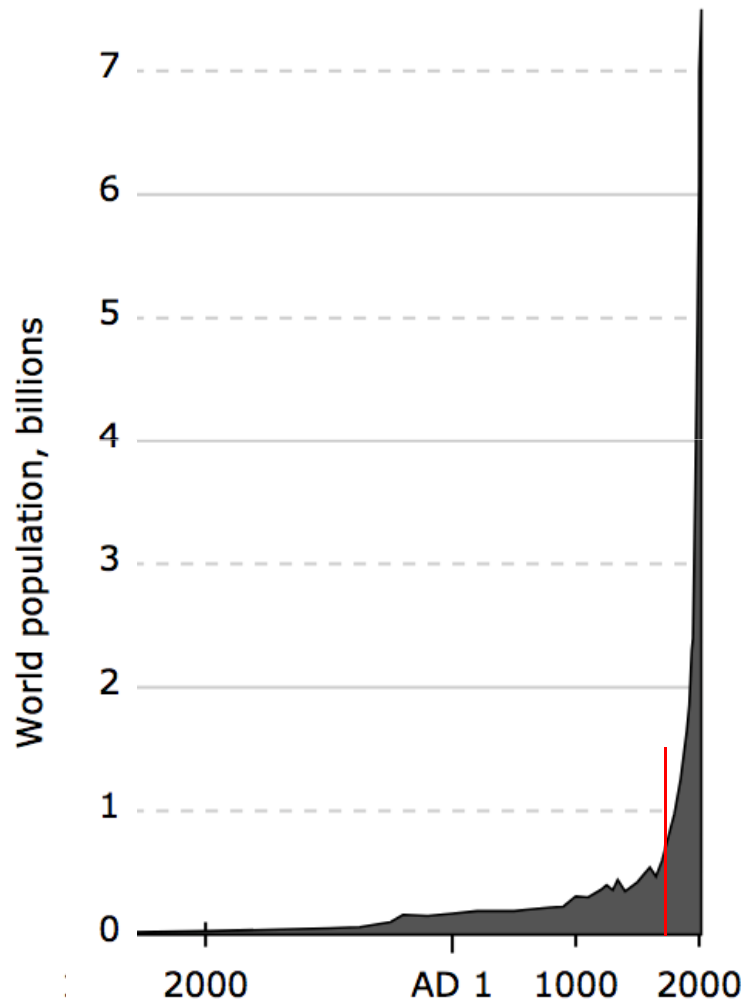


Note: The lines (with 95 per cent confidence intervals) reflect the percentages of children and the bars reflect the numbers of children.

Source: UNICEF, WHO, World Bank, *Joint Child Malnutrition Estimates*, 2012.



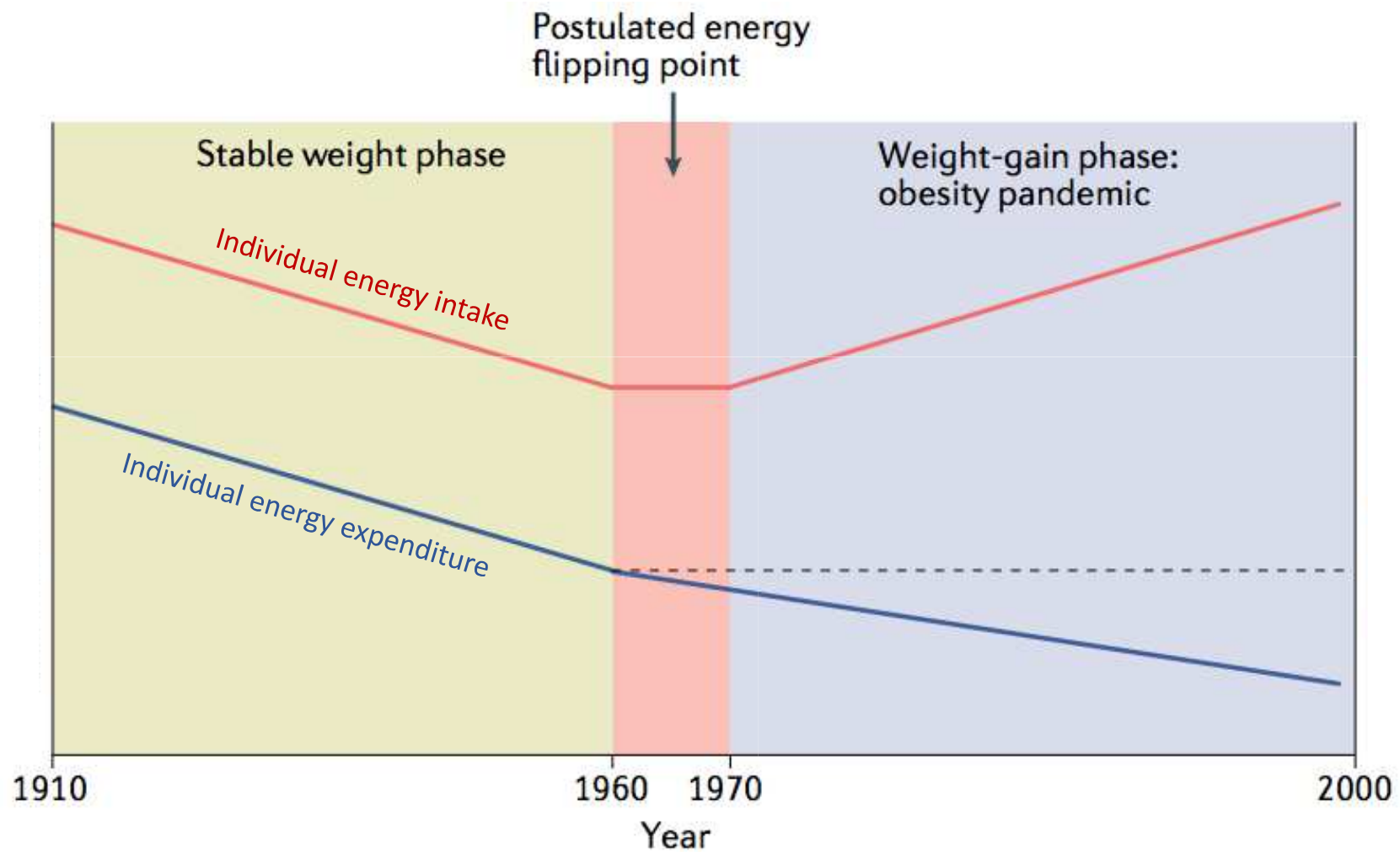
World population: In 2050 we will be 9 Billion



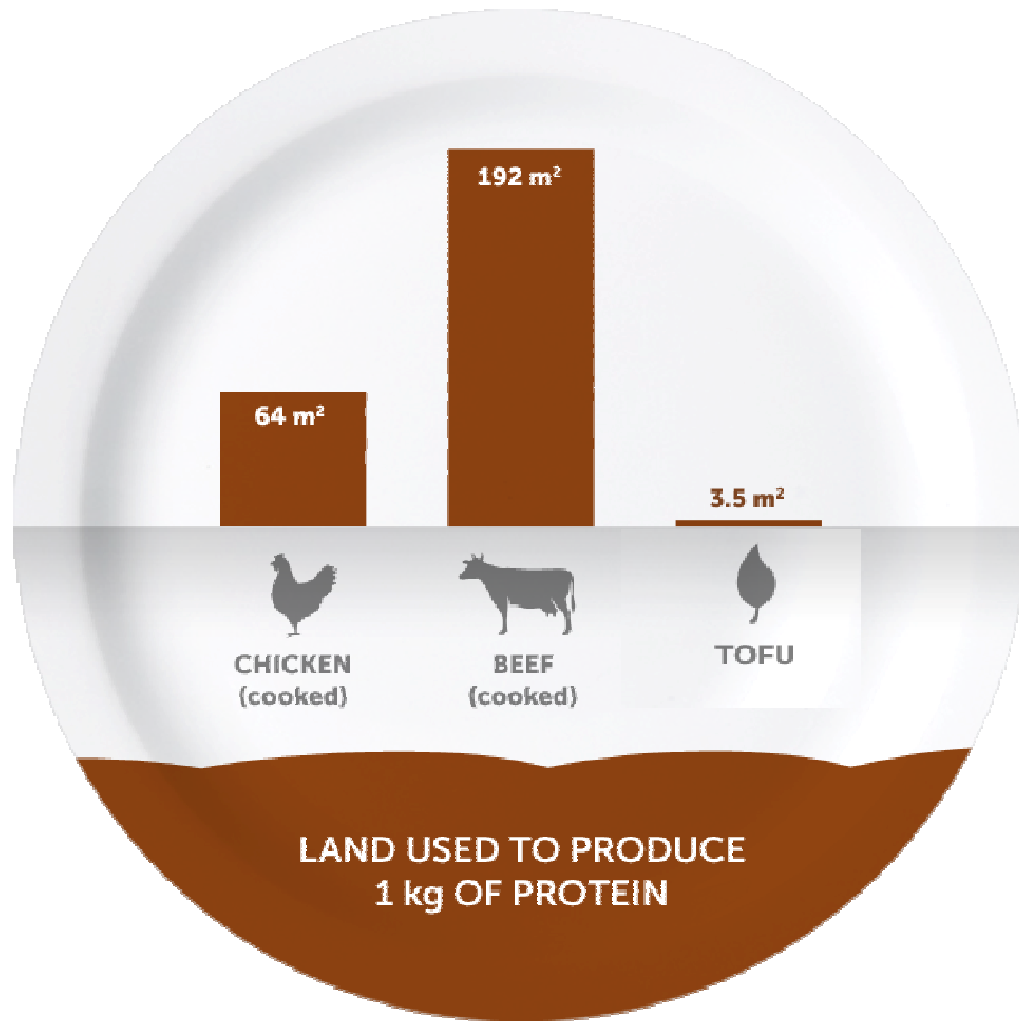
Today we have

- 925 Million under-nourished people
- 2 billion (~1/3 of the world population) have a deficiency of iron, iodine, vit A, zinc, or a combination
- 1.9 billion adults were overweight
- 600 million were obese
- 80% of them live in developing countries

Secular trends and the energy flipping point

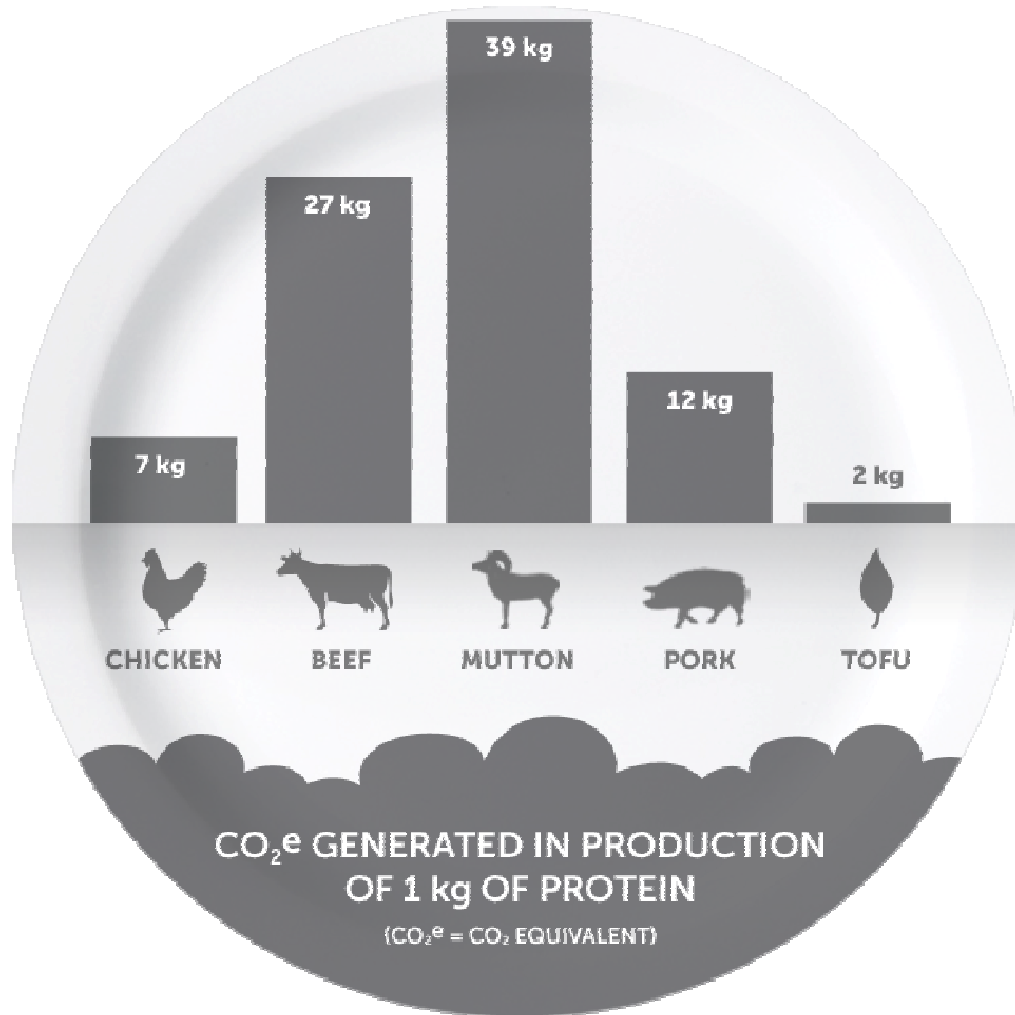


Environmental Impact of Food Production



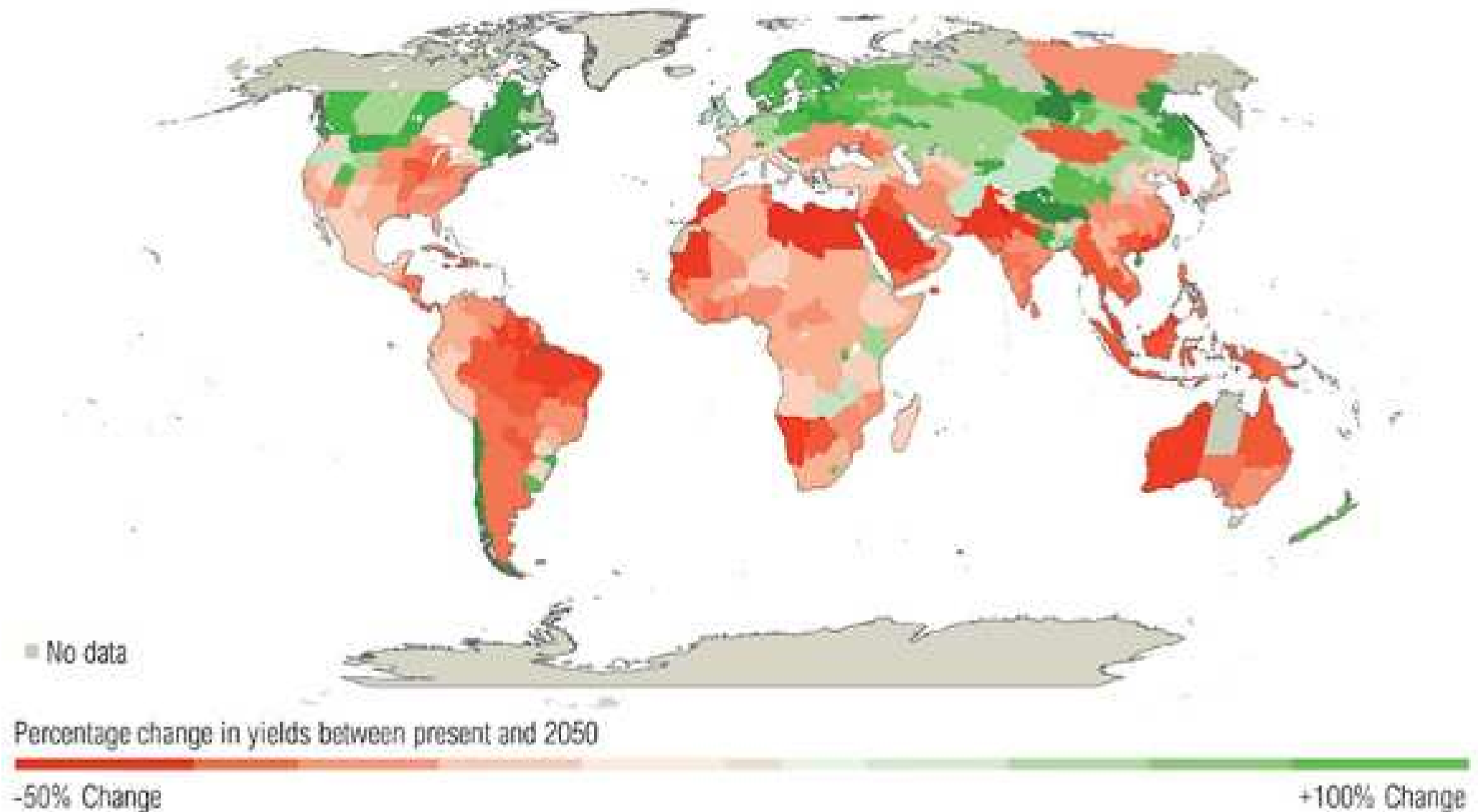
Land use to
produce 1 Kg
of Protein

Environmental Impact of Food Production



CO₂ generated
to produce 1 Kg
of Protein

Estimated change in crop yield – increase in 3 degrees global temperature

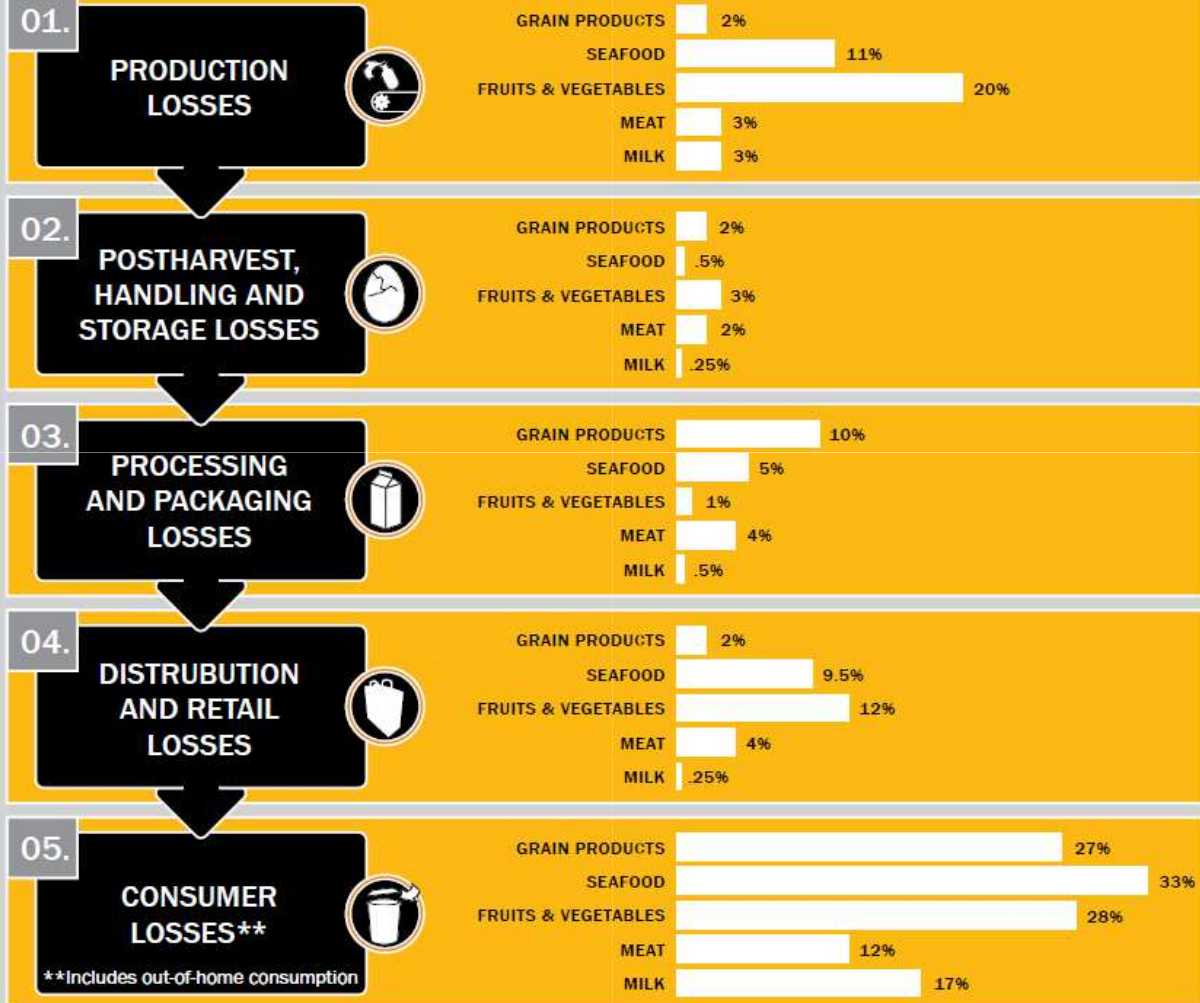


Climate change & Food and Nutrition

- **2° C rise in temperature –
220 million at risk of under-nutrition from reduced
agricultural output**
- **3° C degree rise –
440 million more at risk**
- **Changing patterns of disease**
- **Threat to agriculture & water availability**

NORTH AMERICAN* FOOD LOSSES AT EACH STEP IN THE SUPPLY CHAIN

*Percentages calculated collectively for USA, Canada, Australia, and New Zealand.



Source: Food and Agriculture Organization 2011

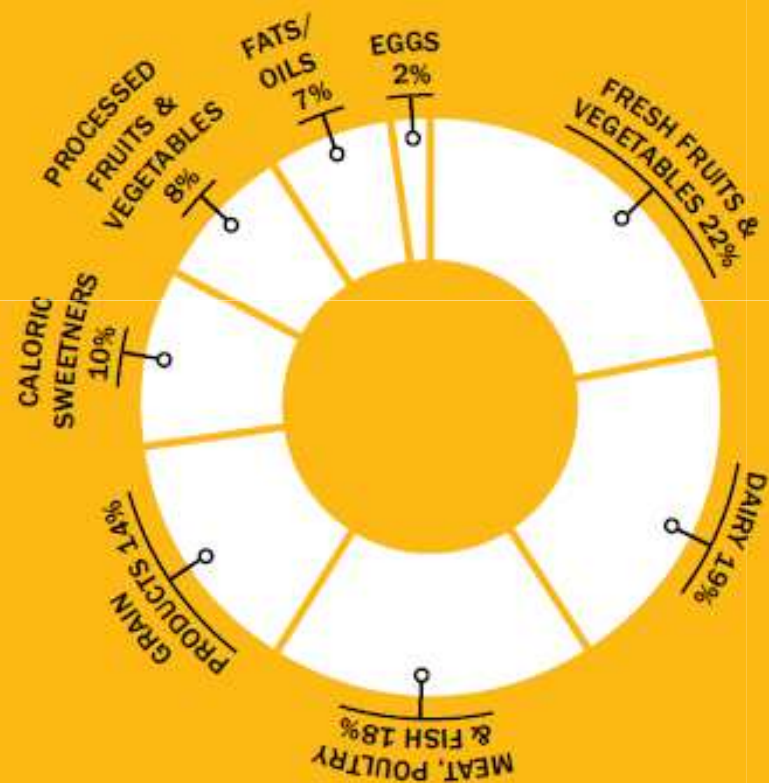
Food Insecurity

- **Worldwide food production: 4,600 Kcal/person/day**
- **Available for consumption: 2,000 – 2,800**
- **FAO: Food production needs to increase by 70% by 2050 to feed 9.1 Billion on increasingly meat dependent diets**
- **Cutting food losses by ½ could equal 25% food production**

the World's Energy, Materials, Food and Water Needs", McKinsey Global Institute, November 2011.
"Reducing Food Losses: A Guide to Reducing Food Losses in the Supply Chain", FAO, 2011.
"The State of Food and Nutrition Security in the World 2011", FAO, 2011.
"The State of Food and Nutrition Security in the World 2012", FAO, 2012.
"The State of Food and Nutrition Security in the World 2013", FAO, 2013.
"The State of Food and Nutrition Security in the World 2014", FAO, 2014.
"The State of Food and Nutrition Security in the World 2015", FAO, 2015.
"The State of Food and Nutrition Security in the World 2016", FAO, 2016.
"The State of Food and Nutrition Security in the World 2017", FAO, 2017.
"The State of Food and Nutrition Security in the World 2018", FAO, 2018.
"The State of Food and Nutrition Security in the World 2019", FAO, 2019.
"The State of Food and Nutrition Security in the World 2020", FAO, 2020.
"The State of Food and Nutrition Security in the World 2021", FAO, 2021.
"The State of Food and Nutrition Security in the World 2022", FAO, 2022.
"The State of Food and Nutrition Security in the World 2023", FAO, 2023.
"The State of Food and Nutrition Security in the World 2024", FAO, 2024.
"The State of Food and Nutrition Security in the World 2025", FAO, 2025.
"The State of Food and Nutrition Security in the World 2026", FAO, 2026.
"The State of Food and Nutrition Security in the World 2027", FAO, 2027.
"The State of Food and Nutrition Security in the World 2028", FAO, 2028.
"The State of Food and Nutrition Security in the World 2029", FAO, 2029.
"The State of Food and Nutrition Security in the World 2030", FAO, 2030.
"The State of Food and Nutrition Security in the World 2031", FAO, 2031.
"The State of Food and Nutrition Security in the World 2032", FAO, 2032.
"The State of Food and Nutrition Security in the World 2033", FAO, 2033.
"The State of Food and Nutrition Security in the World 2034", FAO, 2034.
"The State of Food and Nutrition Security in the World 2035", FAO, 2035.
"The State of Food and Nutrition Security in the World 2036", FAO, 2036.
"The State of Food and Nutrition Security in the World 2037", FAO, 2037.
"The State of Food and Nutrition Security in the World 2038", FAO, 2038.
"The State of Food and Nutrition Security in the World 2039", FAO, 2039.
"The State of Food and Nutrition Security in the World 2040", FAO, 2040.
"The State of Food and Nutrition Security in the World 2041", FAO, 2041.
"The State of Food and Nutrition Security in the World 2042", FAO, 2042.
"The State of Food and Nutrition Security in the World 2043", FAO, 2043.
"The State of Food and Nutrition Security in the World 2044", FAO, 2044.
"The State of Food and Nutrition Security in the World 2045", FAO, 2045.
"The State of Food and Nutrition Security in the World 2046", FAO, 2046.
"The State of Food and Nutrition Security in the World 2047", FAO, 2047.
"The State of Food and Nutrition Security in the World 2048", FAO, 2048.
"The State of Food and Nutrition Security in the World 2049", FAO, 2049.
"The State of Food and Nutrition Security in the World 2050", FAO, 2050.

TOTAL FOOD LOSS FROM RETAIL, FOOD SERVICE AND HOUSEHOLDS

(BREAKDOWN AS A PERCENTAGE OF TOTAL FOOD LOSS)



Source: *Journal of Consumer Affairs*, Fall 2011: 492-515.

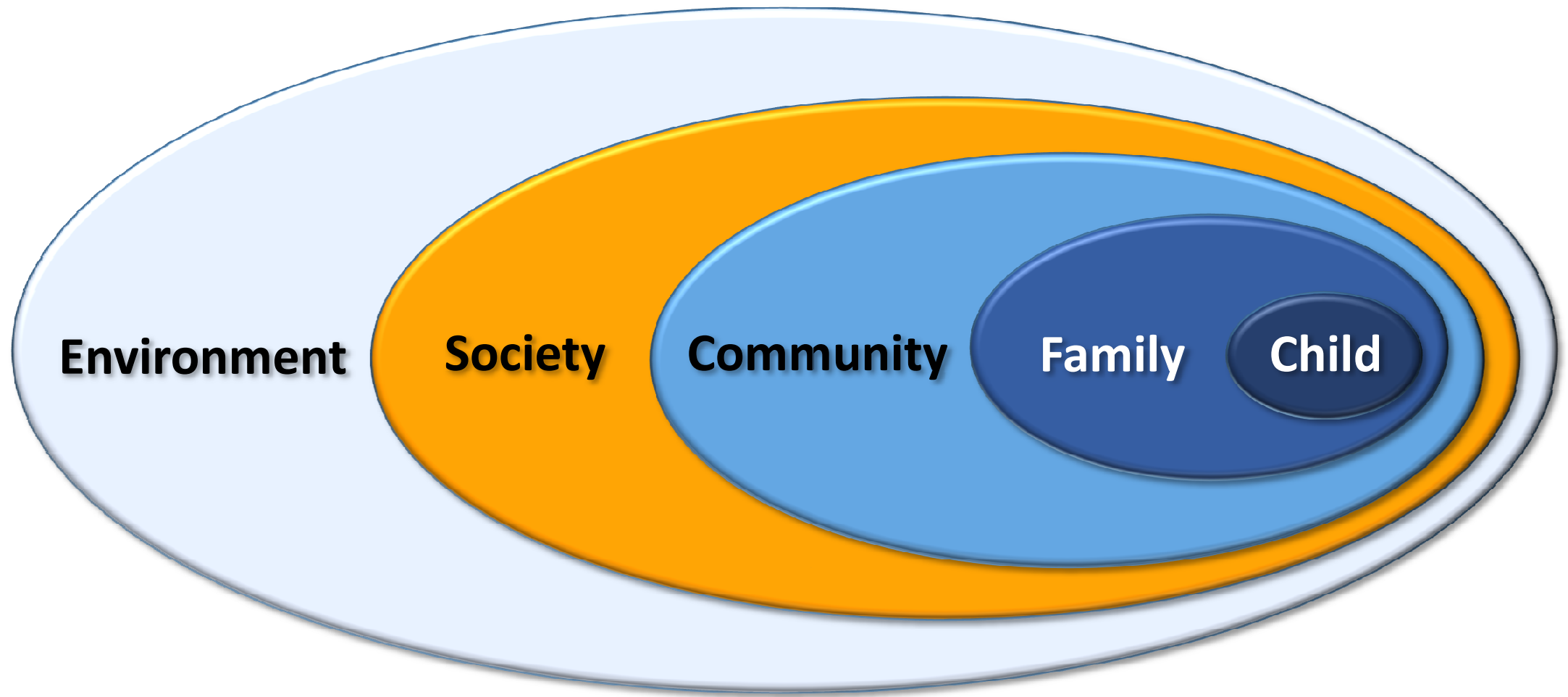
Food Insecurity

- Worldwide food production is **4,600 Kcal/person/d**
- **Only 2,000 – 2,800 are available for consumption**
- Cutting food losses by ½ could equal 25% food production

Food / Income distribution / Dietary preferences

[illegible]

Ecosystem of nutritional determinants



The Melander family of Bargteheide
Gasto en alimentos
US \$500 por semana



The Caselas family, Cuernavaca Mexico
Gasto en alimentos

US \$189 por semana

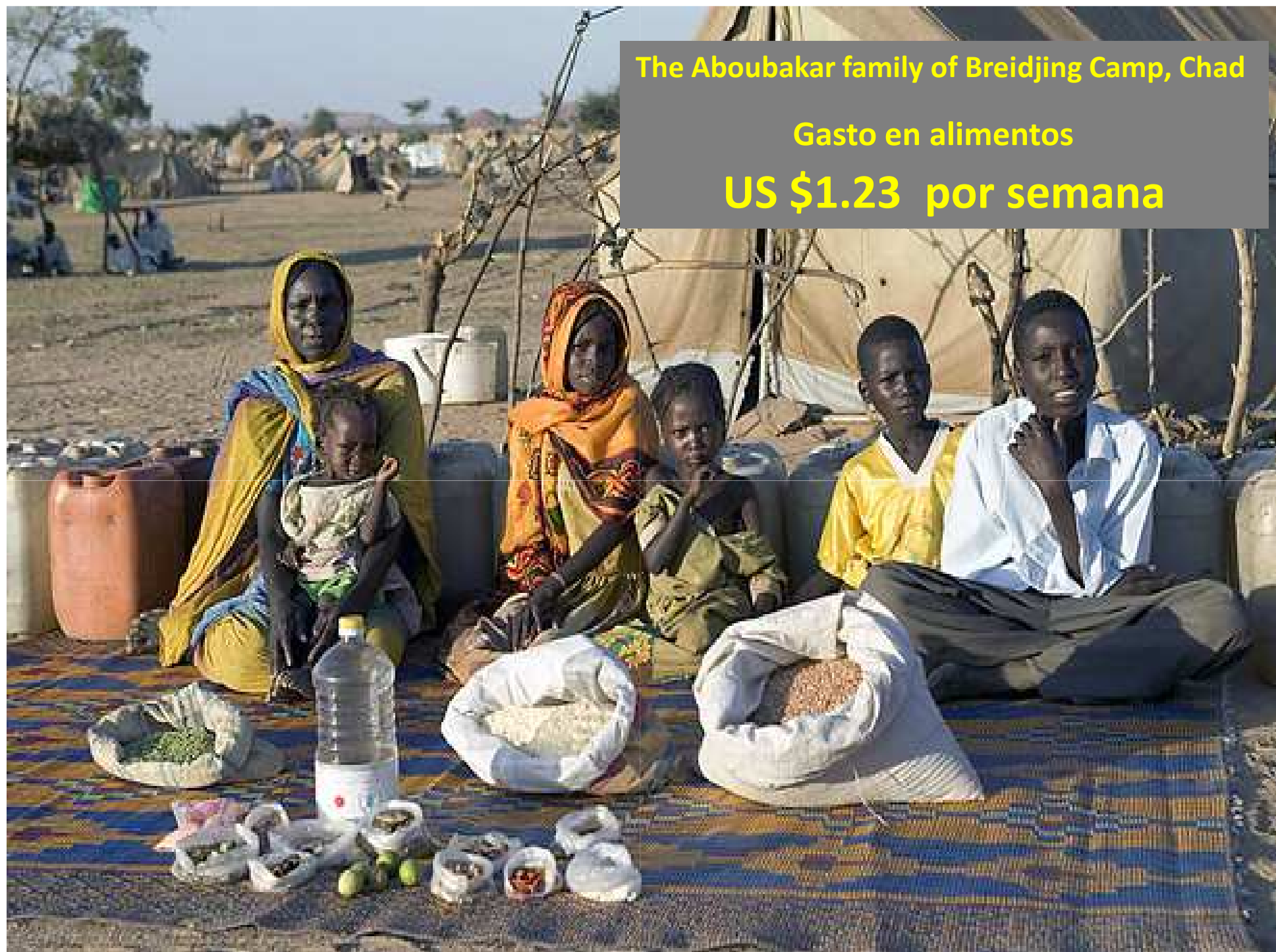


Menzel P , Hungry Planet

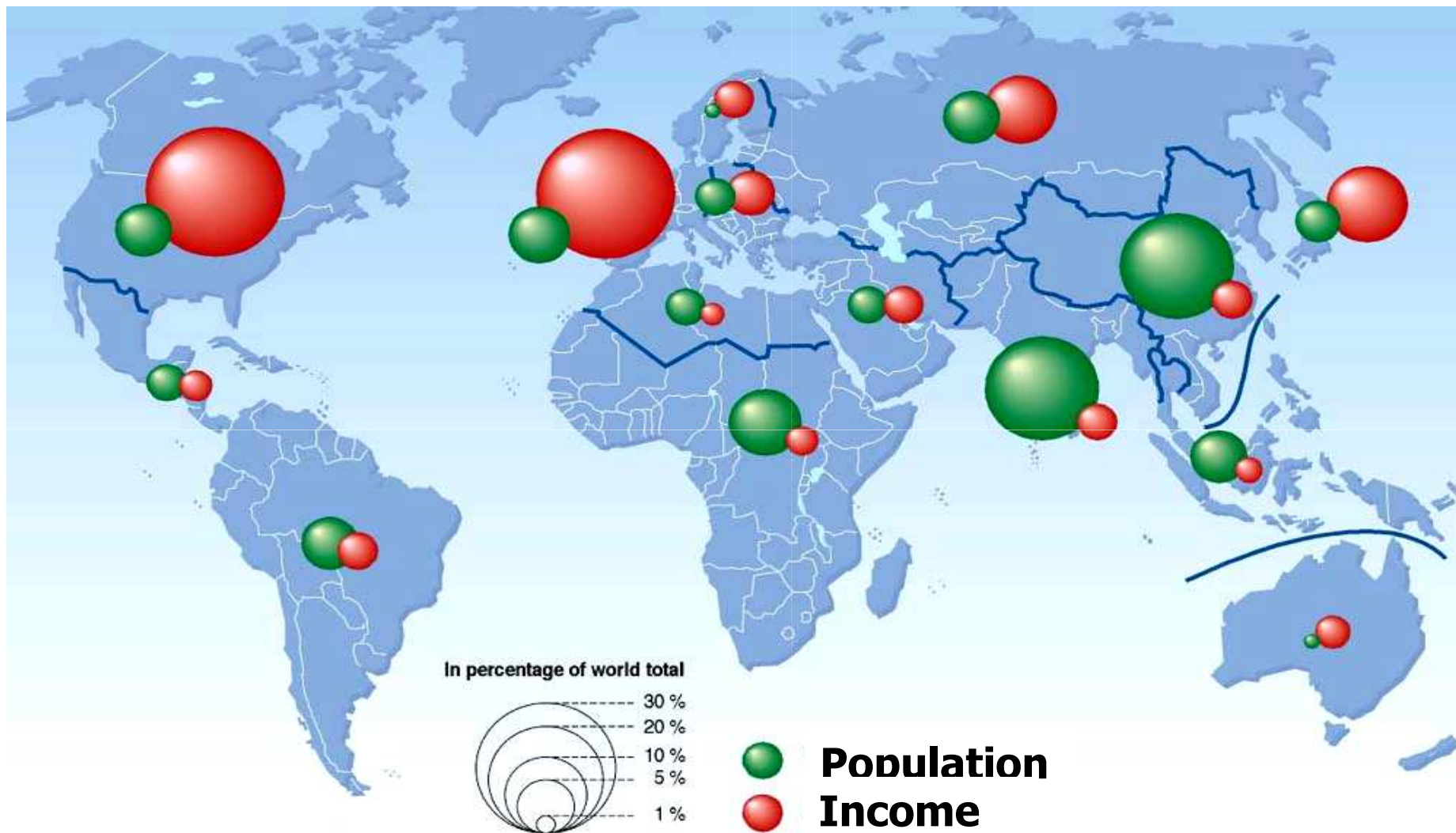
The Aboubakar family of Breidjing Camp, Chad

Gasto en alimentos

US \$1.23 por semana



A world with Inequality



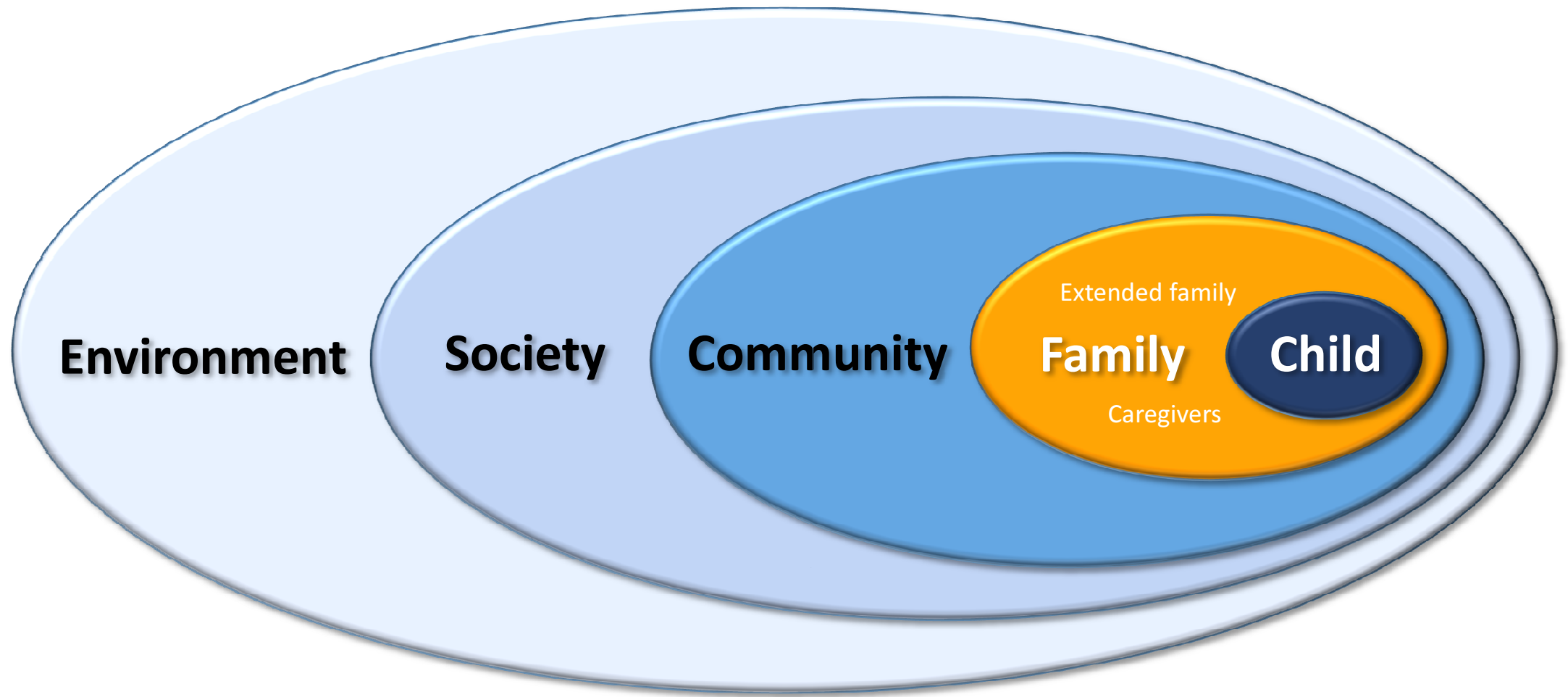
Disparidades en la epidemia de obesidad



Education-related inequality in overweight

Overweight defined as BMI $\geq 25 \text{ kg/m}^2$. Education level is categorised into three groups (primary, secondary, tertiary education). On the basis of the relative index of inequality measures the inequality of being overweight by education level. OECD analysis of national health survey data*.

Ecosystem of nutritional determinants



Global Key Findings - Similar problems across countries, but differences in magnitude

- 1. Low breastfeeding rates**
- 2. Early Introduction of Complementary Foods and Cow Milk**
- 3. Low Fruit and Vegetable Consumption**
- 4. High Sugar and Sweetened Beverage consumption**

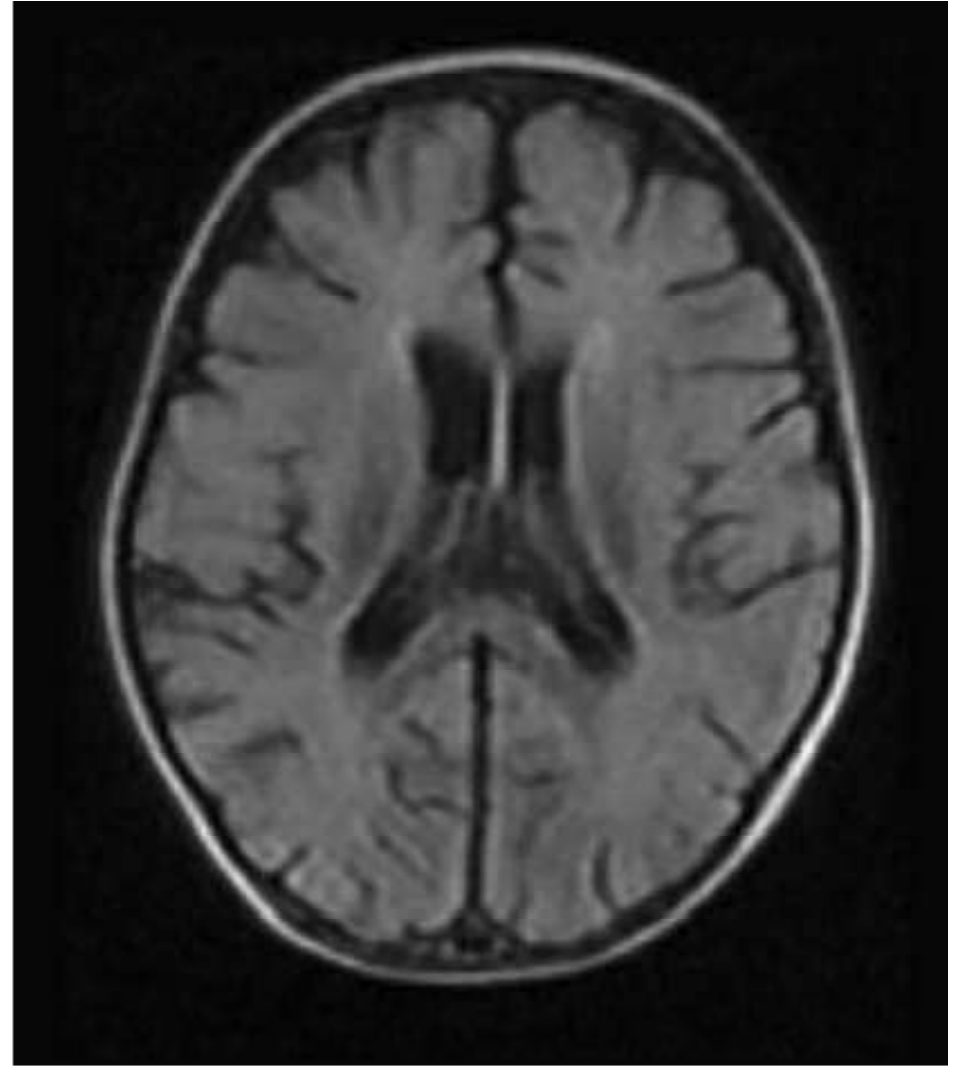
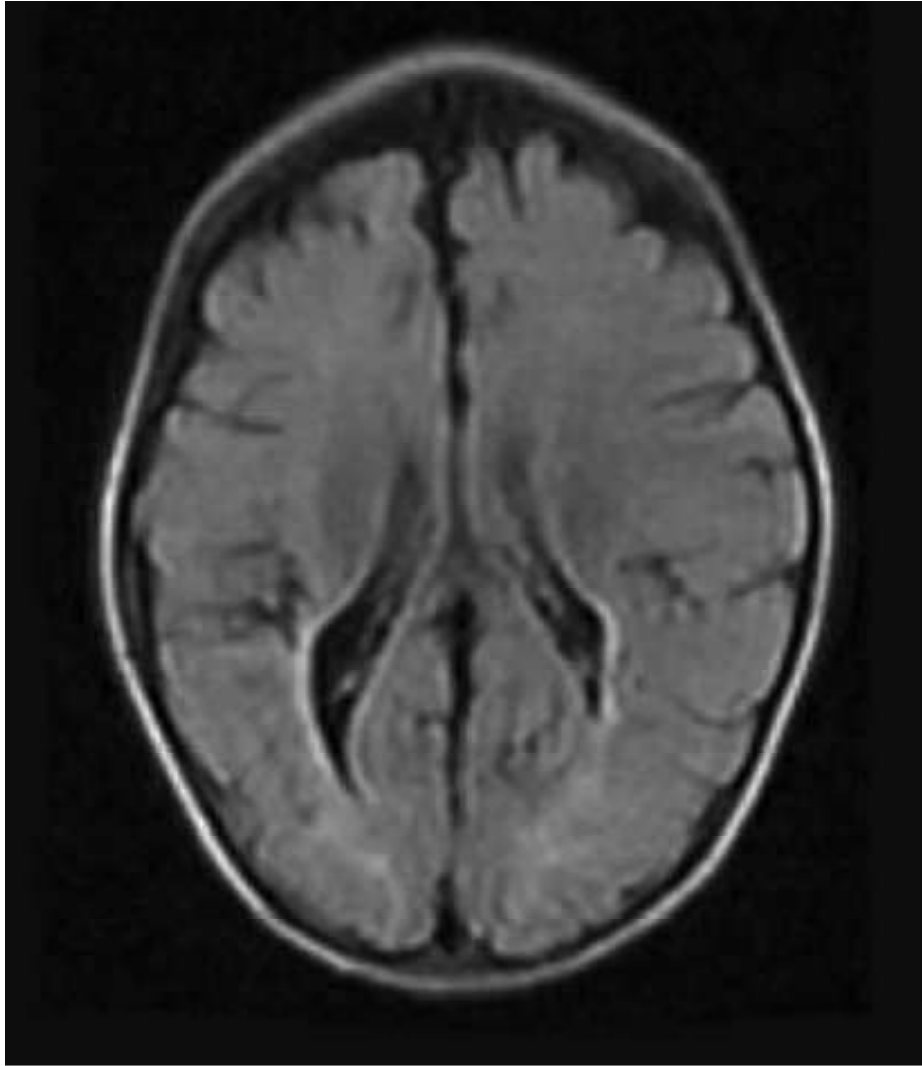
Excess calories and protein,

Deficient Iron

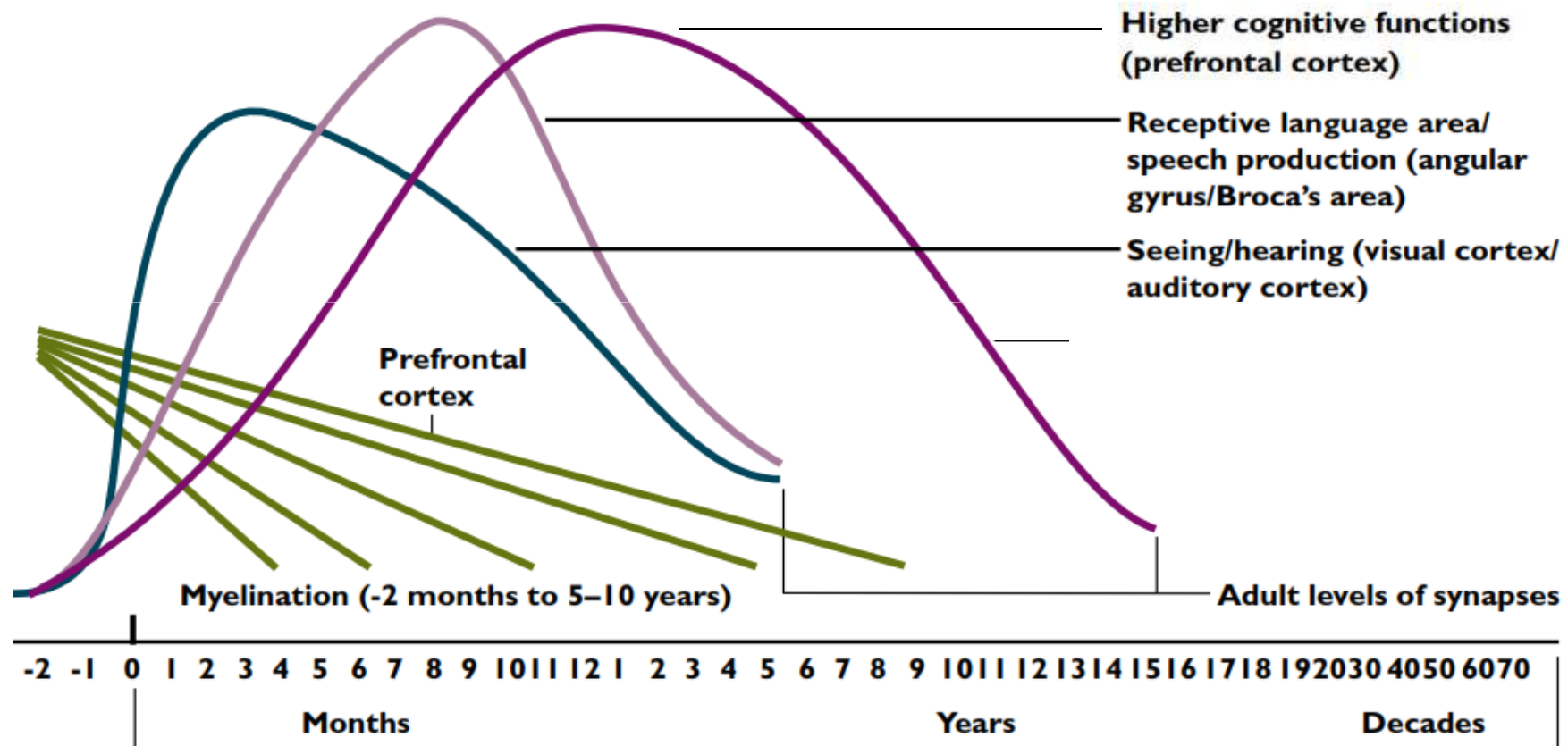
Low total fat

Excess sodium

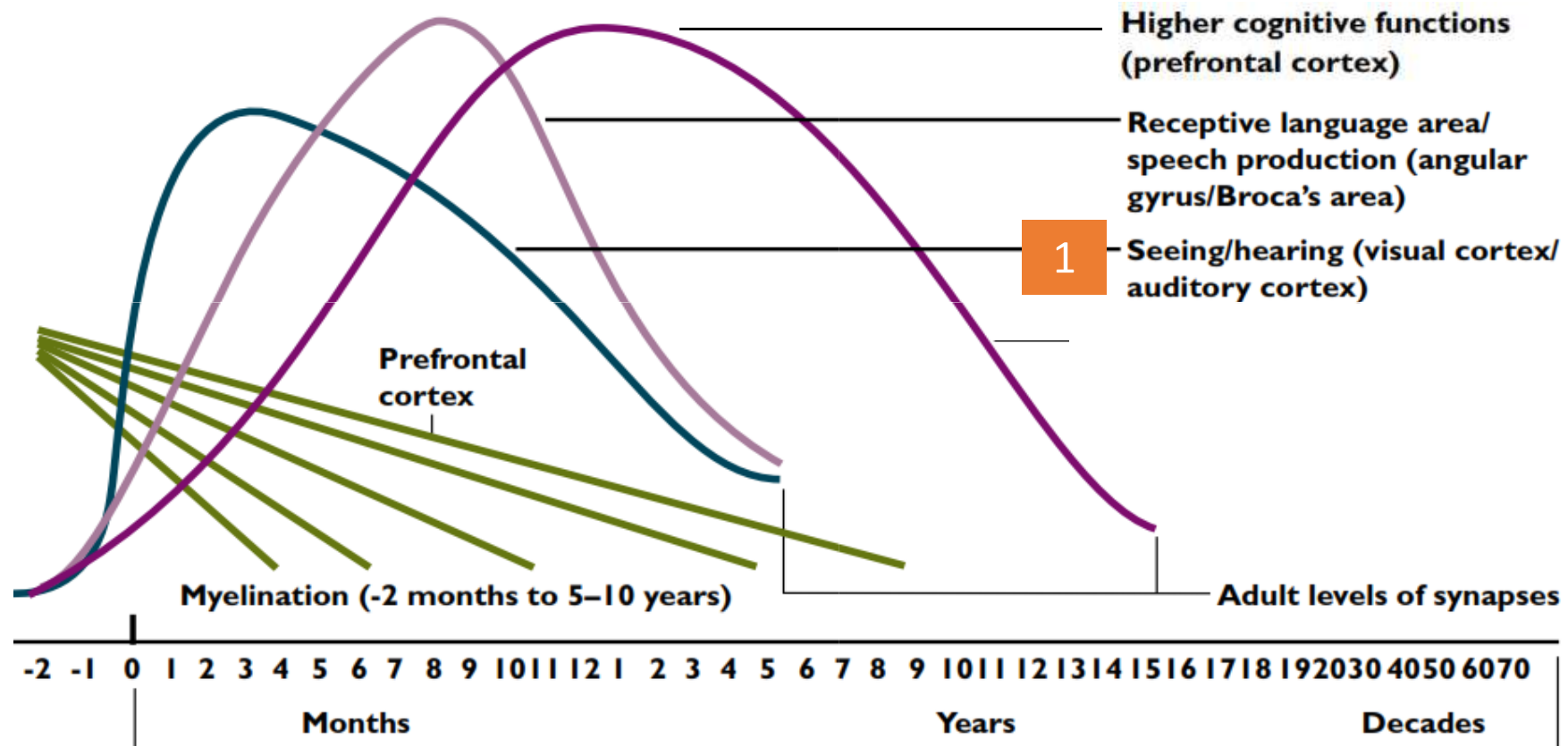
Growth Failure and Neuro-Developmental Outcome



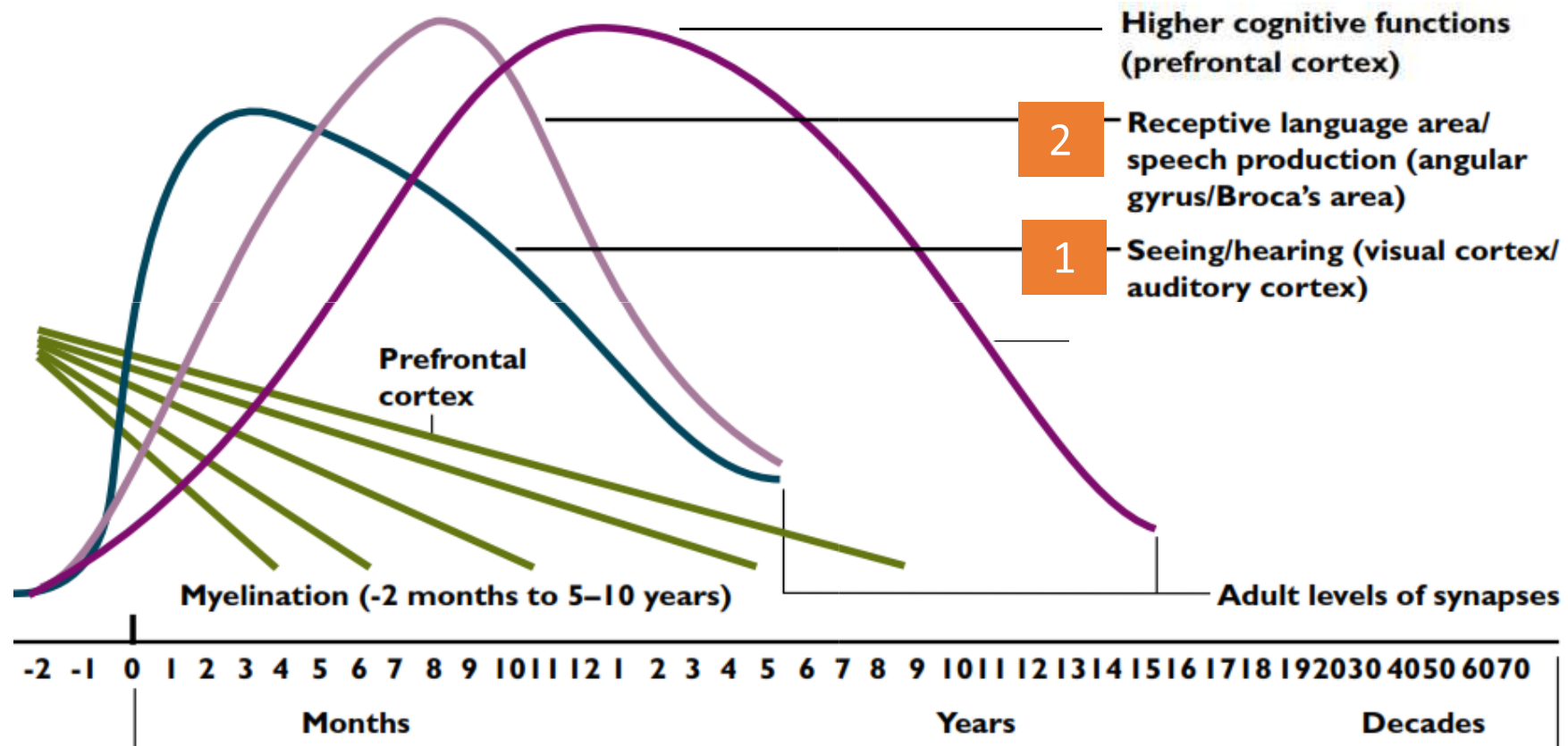
Developmental Course of the Human Brain



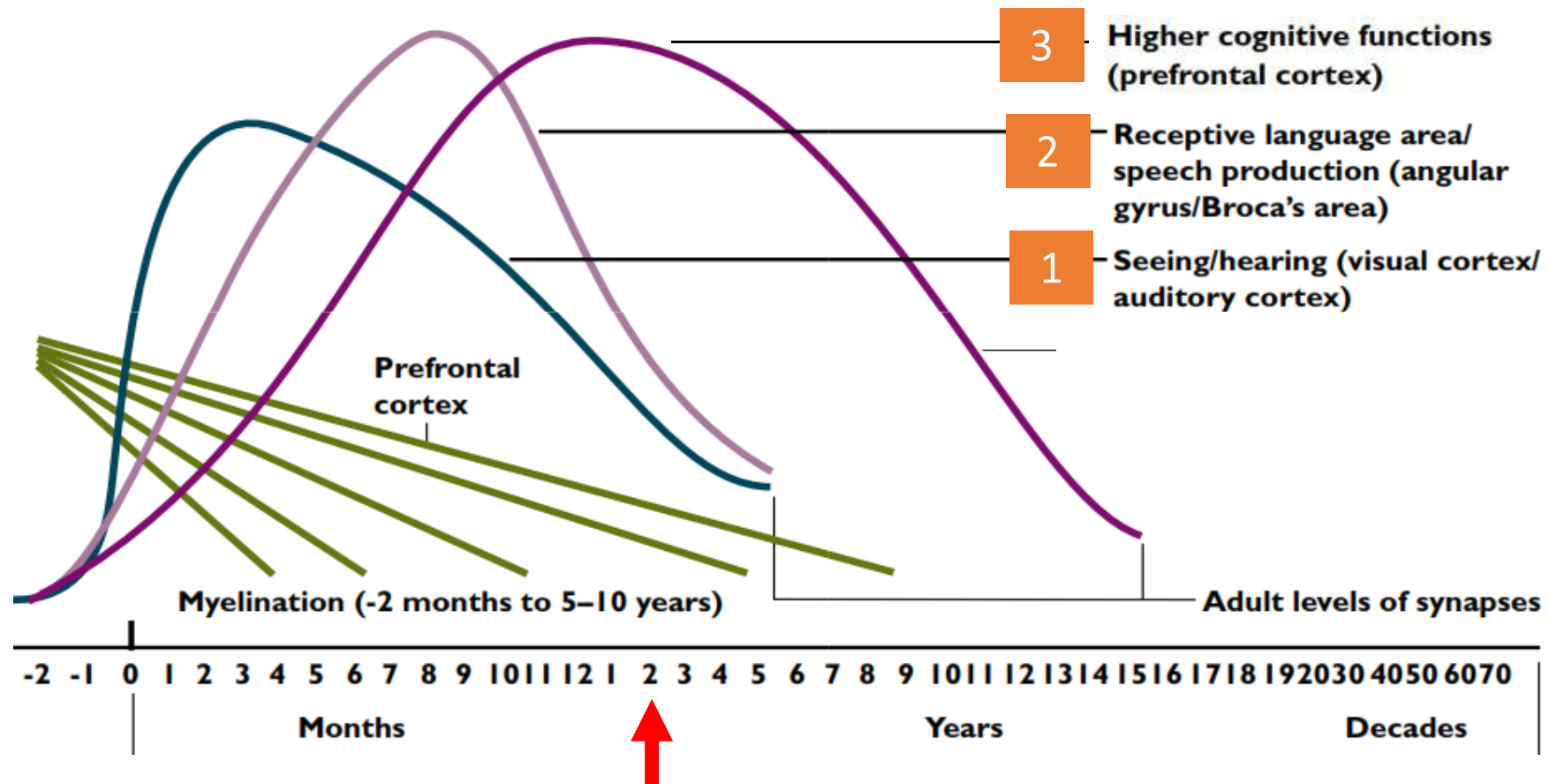
Developmental Course of the Human Brain



Developmental Course of the Human Brain

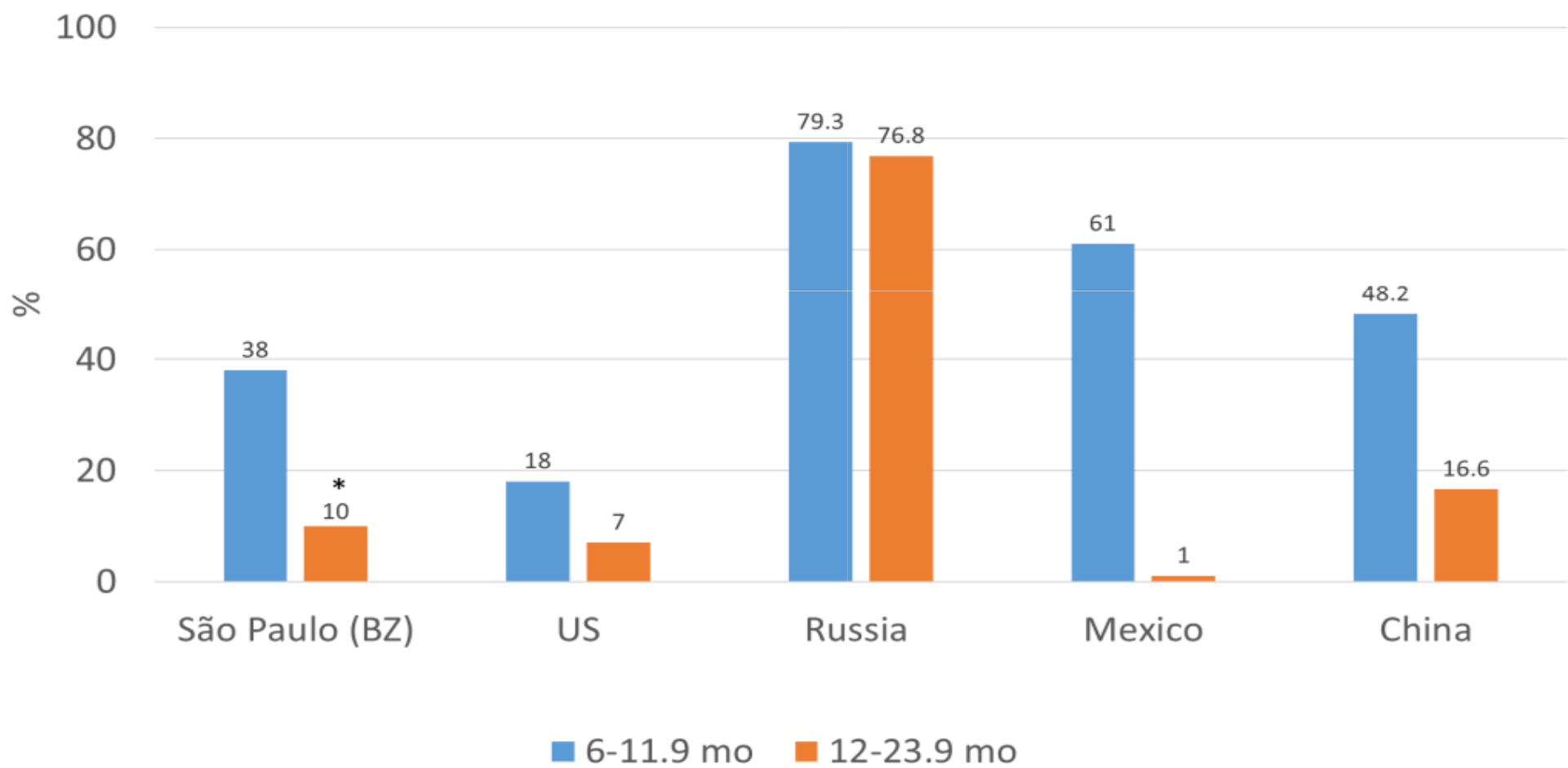


Developmental Course of the Human Brain



Inadequate iron intake among infants

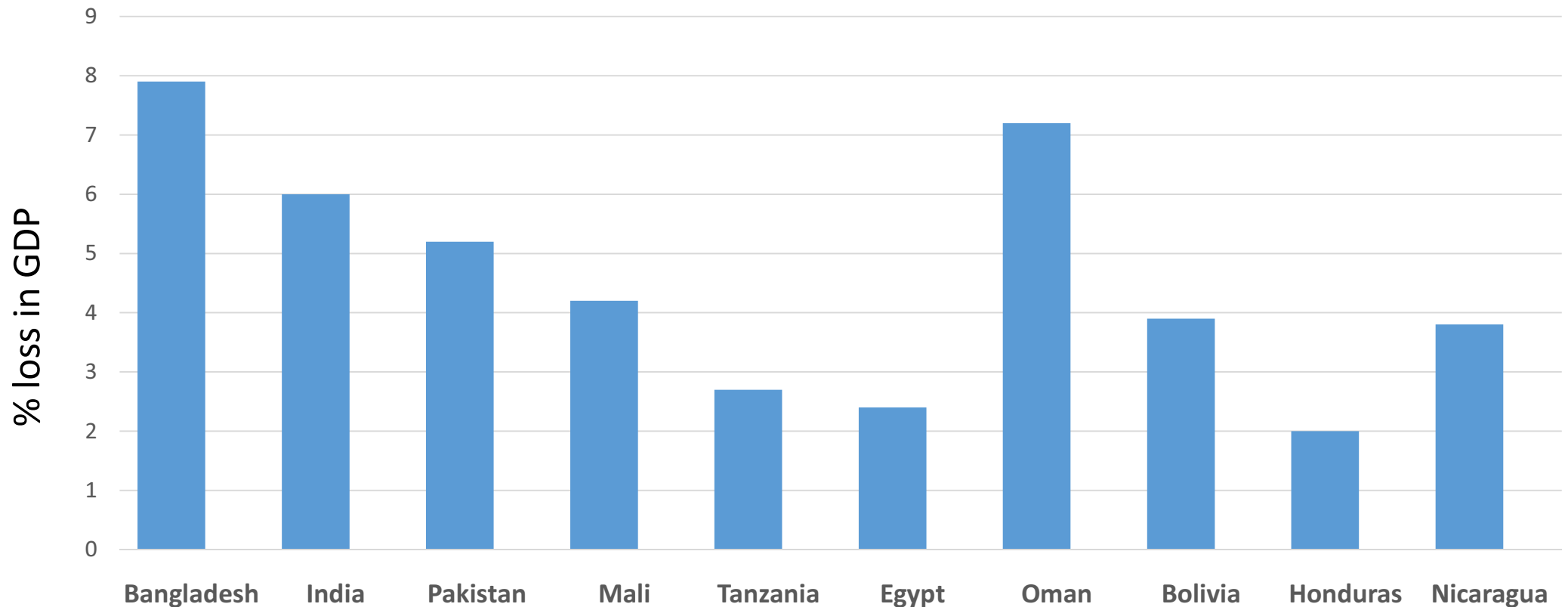
Percent of infants below the recommendations for iron intake



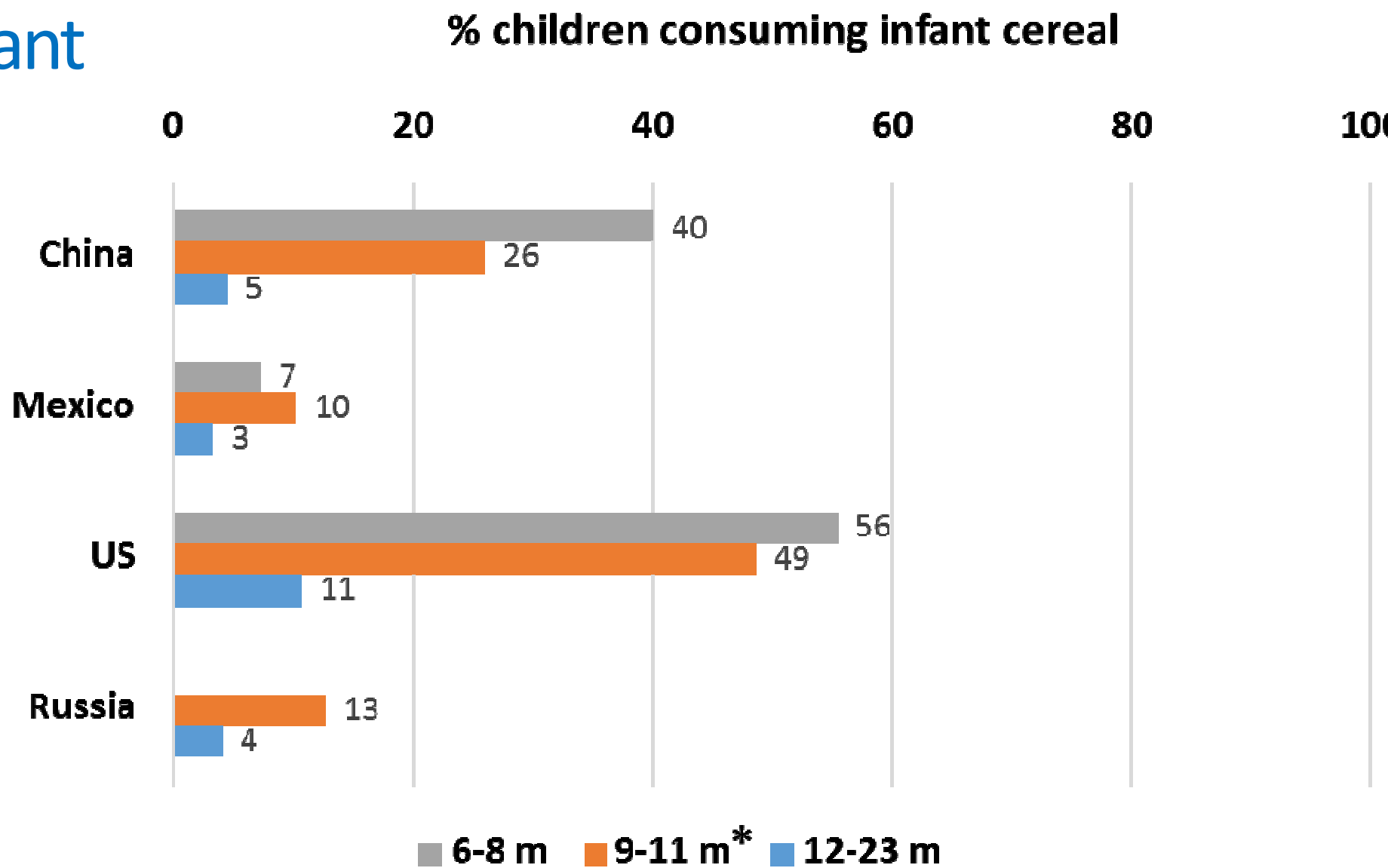
9mo for Brazil
for RU, GCR and BZ on inadequate iron intake are overestimated as based on 1 day of 24 h recall

Economic losses from iron deficiency anemia

Cognitive and productive – as % of GDP



Fortified infant cereals

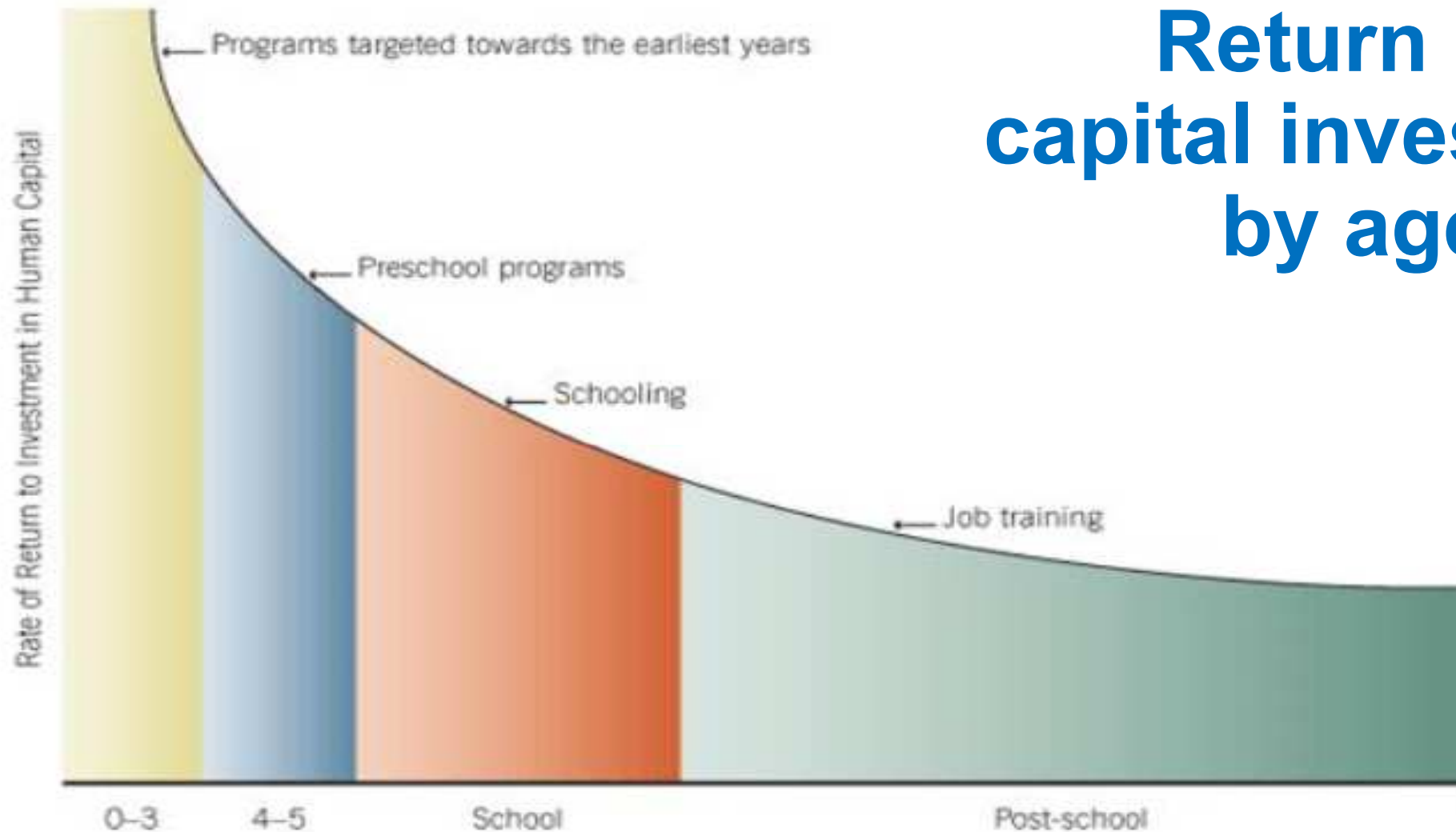


*7-11 m for Russia



- Nutrition in early life sets the course for long term health
- Adequate nutrition requires a safe and affordable food supply
- Healthy diet patterns, are set very early in life...
- and they require **education** on food choices and feeding behaviors

Return on capital investment by age



Return per capital investment at different ages



***Nutrition in the first 1,000 days
is society's greatest
opportunity...***

***and it's everyone's
responsibility***

