Global Food Security and Obesity within climate change challenges

José Graziano da Silva

Instituto Fome Zero

ifz.org.br

State of Food Security and Nutrition in the World 2024

Levels of child stunting & wasting have been declining and of exclusive breastfeeding rising over the past decade, but the world is not on track to achieve any of the global nutrition targets by 2030

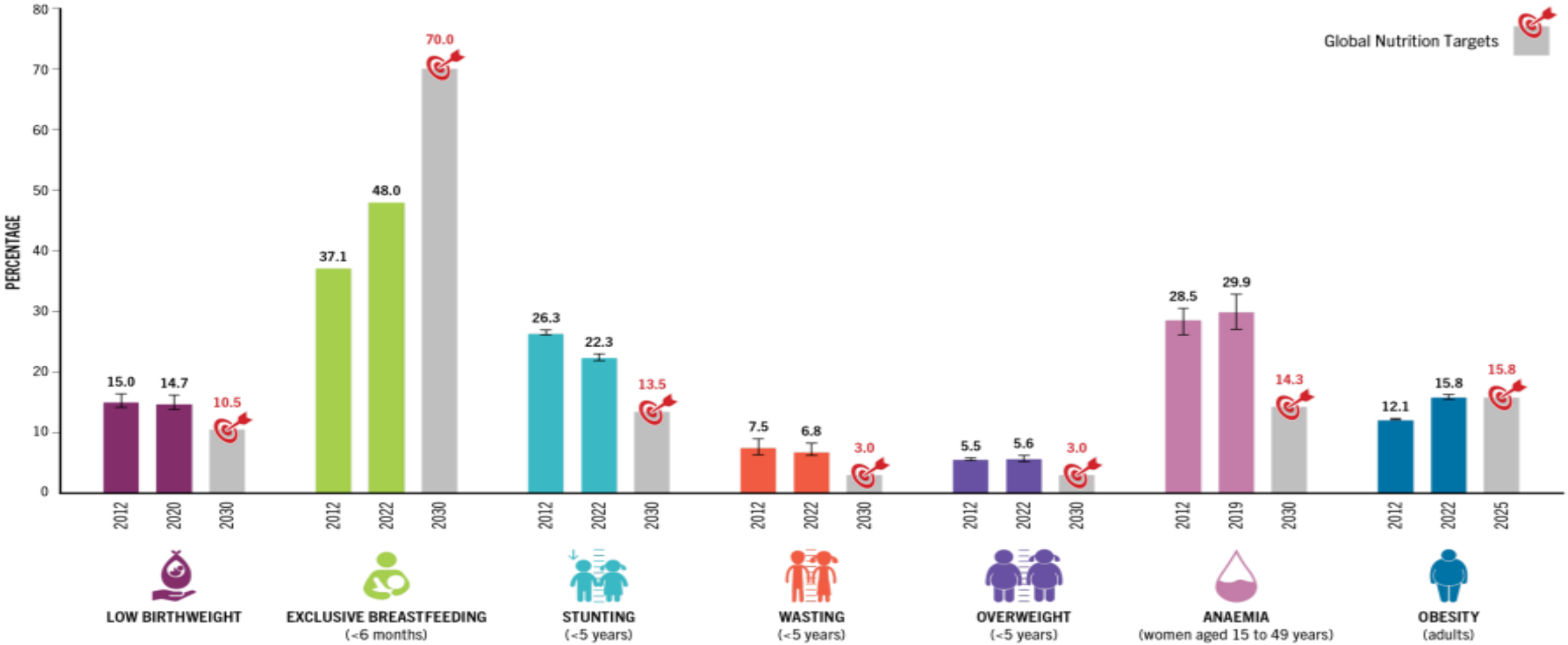

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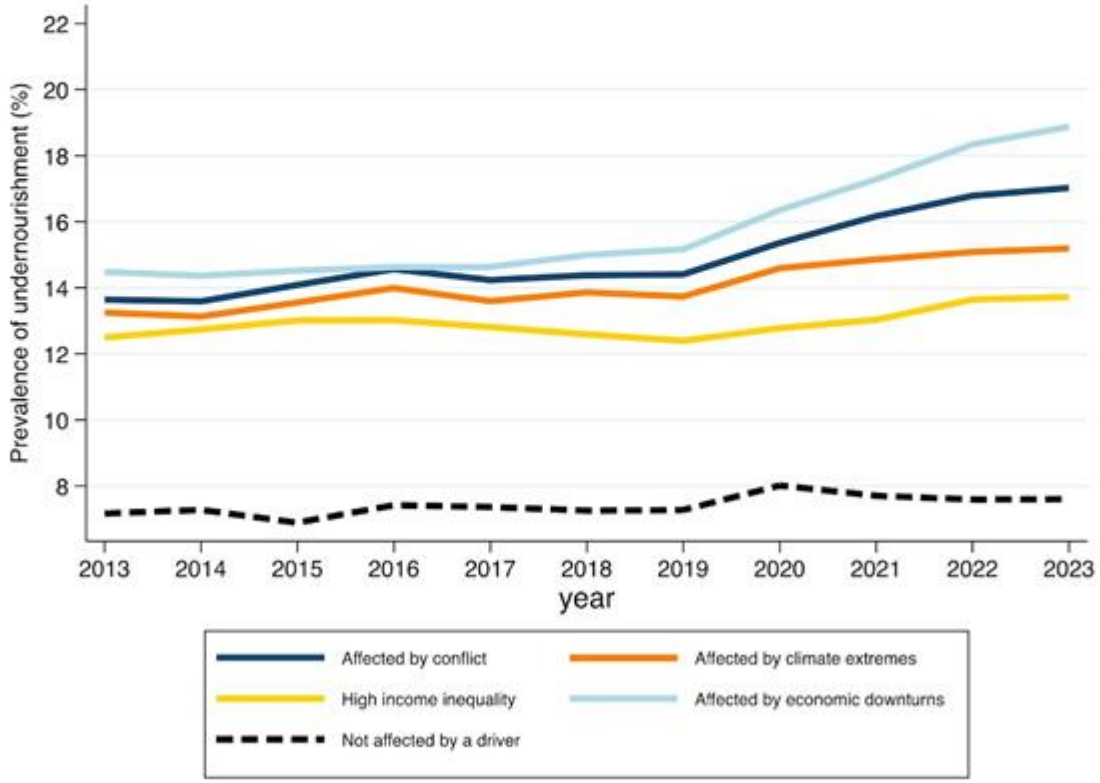
Figure 3.5 Hunger is higher and has increased the most in countries affected by the major drivers and hunger is greater and increases are higher in countries affected by more than one major driver

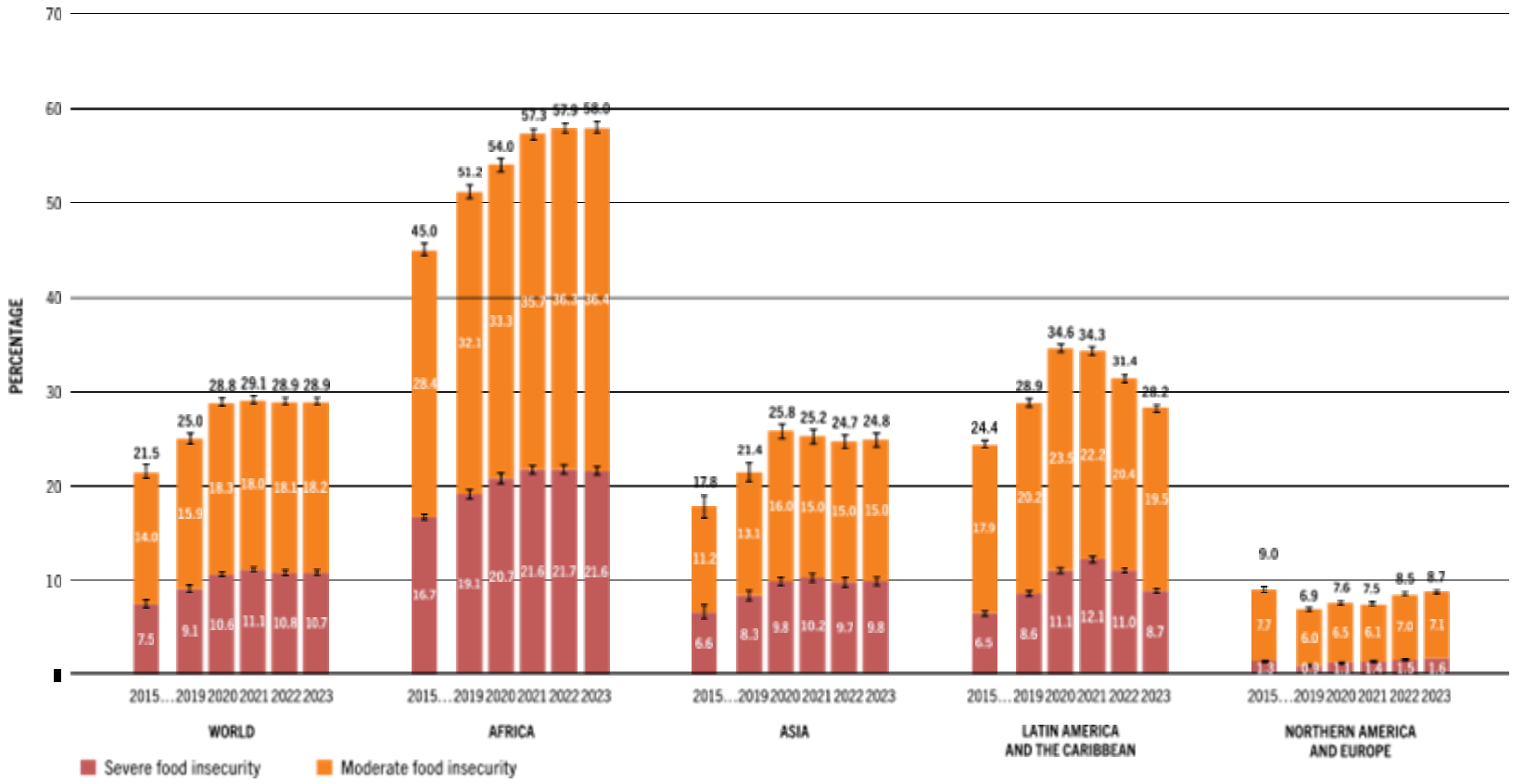
A. Trend in the prevalence of undernourishment (PoU) for countries affected by the major drivers and facing high income inequality (2013–2022)



- The number of undernourished people (PoU) **is still high**. In 2030, FAO is projecting to reach **582 million**, far from the goal and **130 million** higher than before COVID-19;
- Regarding **food insecurity**, according to FIES Methodology, **1.6 billion people are in Severe or Moderate Food Insecurity**;
- Food Insecurity in **rural areas seems to be higher** than in cities.
  - But if we isolate the income factor, **food insecurity in urban areas is worst than in rural areas** - against the common sense.

Food security levels remained virtually unchanged globally from 2022

TRENDS IN THE PREVALENCE OF MODERATE OR SEVERE FOOD INSECURITY BY REGION



NOTES: Differences in totals are due to rounding of figures to the nearest decimal point. Only regions for which data were available for all the subregions are shown.

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Global hunger is persisting at the same level after the sharp rise in the wake of the pandemic

The prevalence of undernourishment has changed little in three years, still affecting between 8.9 and 9.4 percent of the population in 2023 - about 9.1 percent compared with 7.5 percent in 2019.

Urgent action is needed to get back on track towards achieving SDG 2 - Zero Hunger

Between 713 and 757 million people faced hunger in 2023 - about 733 million, considering the mid-range. The number is projected to decrease to 582 million by 2030, still far from achieving the Zero Hunger goal.

Over 2.3 billion people in the world lacked regular access to adequate food in 2023

An estimated 28.9 percent of the global population - 2.33 billion people - were moderately or severely food insecure - more women than men, and more people living in rural areas than in urban areas.

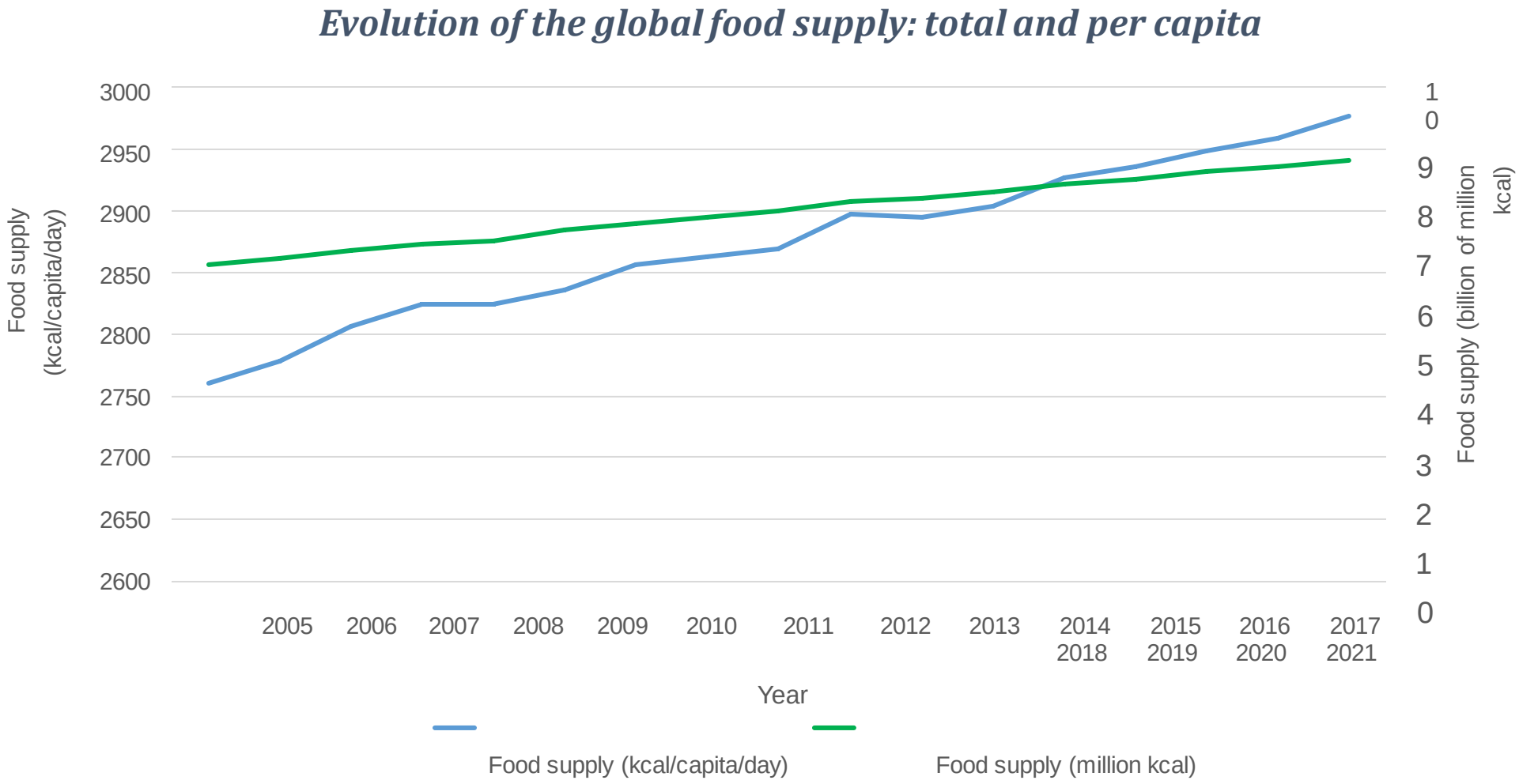
Healthy diets are out of reach for more than 2.8 billion people

Updated and improved estimates show that more than one-third of people in the world - about 2.83 billion - were unable to afford a healthy diet in 2022.

The world is not on track to achieve global nutrition targets

Progress has been on stunting and wasting in children under five years as well as exclusive breastfeeding, but the world is not on track to achieve any of the seven global nutrition targets by 2030.

THE PROBLEM IS NOT WHAT THE WORLD PRODUCES



Source: FAOSTAT

Obesity and the cost of healthy diets

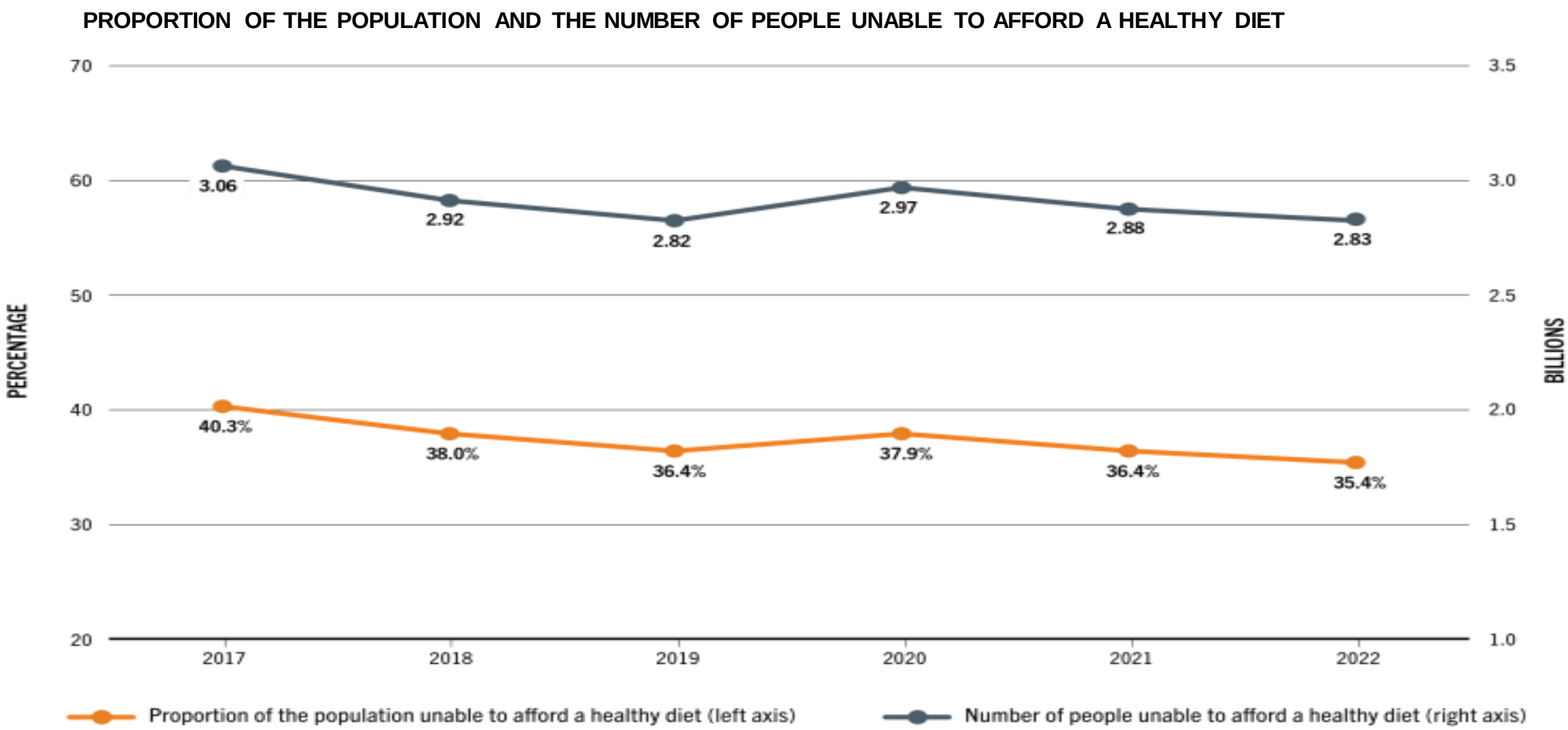
Table 2. Availability of food groups to meet a healthy diet basket by region (share of per capita daily requirements, 2020)

	Africa	Asia	Latin America	Northern America	Europe	World
Staple foods	188	108	68	44	73	111
Animal source foods (except oils)	−33	40	143	331	258	71
Pulses, nuts and seeds	−38	−37	−42	−43	−67	−41
Vegetables	−55	25	−63	−20	−27	−4
Fruits	−40	−31	−2	−13	−24	−29
Fats and oils	−21	-3	67	100	82	12

***Source**: Dolislager, M.J., Holleman, C., Liverpool-Tasie, L.S.O. & Reardon, T. 2023. Analysis of food demand and supply across the rural–urban continuum for selected countries in Africa. Background paper for The SOFI 2023. FAO Agricultural Development Economics Technical Study 23-09. Rome, FAO.*

- **Components of a Healthy Diet**: WHO recommends a diet low in saturated fats, free sugars, and salt, and rich in fruits and vegetables.
- **Cost and Affordability**: FAO's monitoring shows 3.14 billion people (42%) couldn't afford a healthy diet in 2021, with costs rising globally.
- **Call to Action**: Address insufficient food production and affordability constraints to ensure access to nutritious diets worldwide.

Despite two years of improvement, more than one-third of people in the world - about 2.83 billion - were unable to afford a healthy diet in 2022



State of Food Security and Nutrition in the World 2024

HEALTHY DIETS

- World food production **is far enough to nourish** the whole population.
- In 2030, UN estimates that we are going to have **8.5 billion people on Earth**
- By 2030 the number of megacities (10 million inhabitants or more) will have increased from 31 to 407. **Almost 2 in 3 people will live in urban areas** by 2030.
- **food insecurity in urban areas is more difficult to eradicate than in rural areas** .

Area	Cost (USD PPP/ capita/day)	Unaffordability Population (million)	Unaffordability Population (%)
World	3.662	3,100	42.2
Latin America and Caribbean	4.081	133	22.7
Brazil	3.350	48	22.4

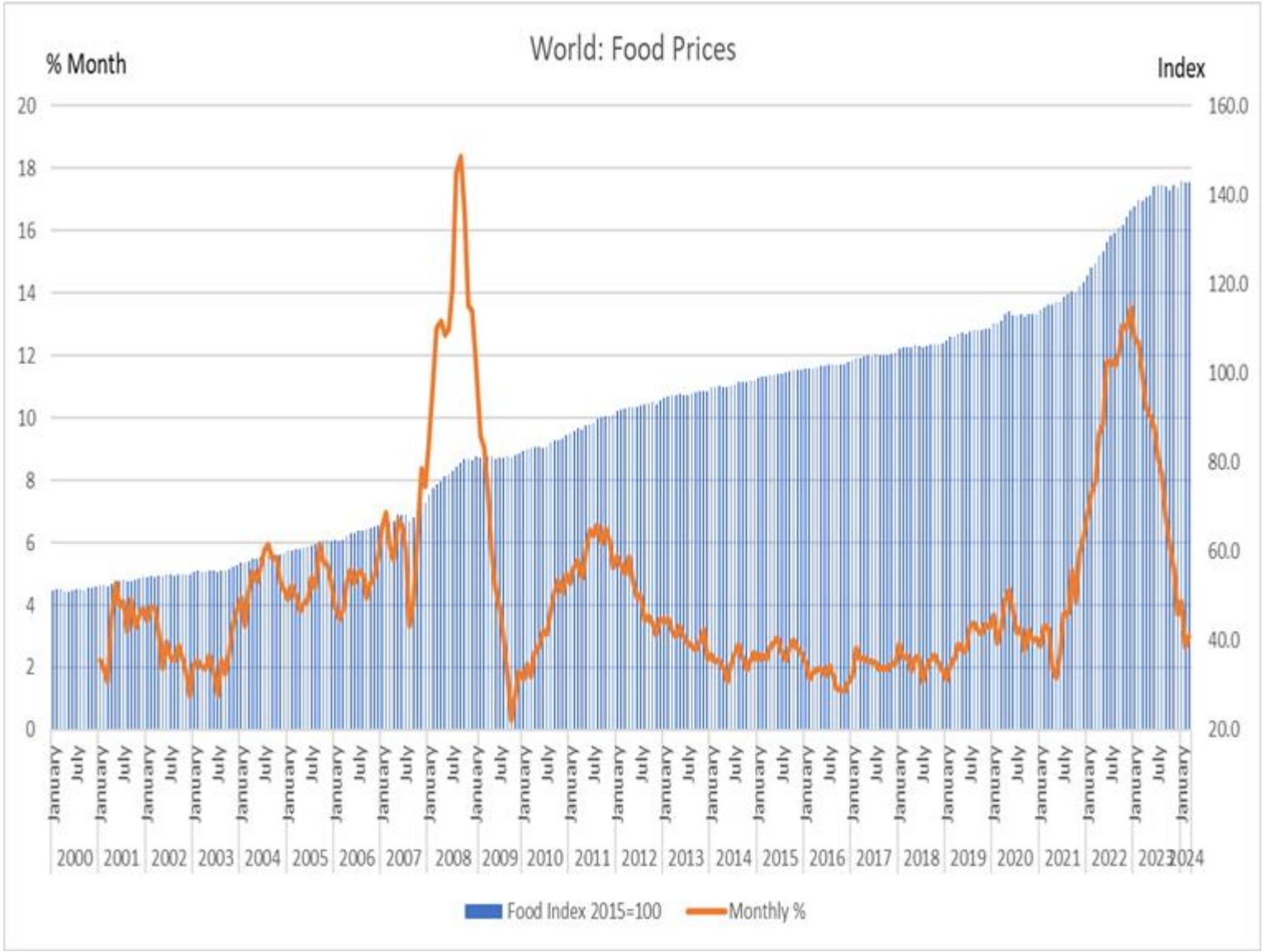
- A healthy diet cost **almost 4 times compared to sufficient diet**, according to FAO.
- In Latin America and Caribbean, **a healthy diet costs US$ 4,08/day/person**, out of reach of 133 million people (3,1 billion people in world)

ACCESS TO FOOD

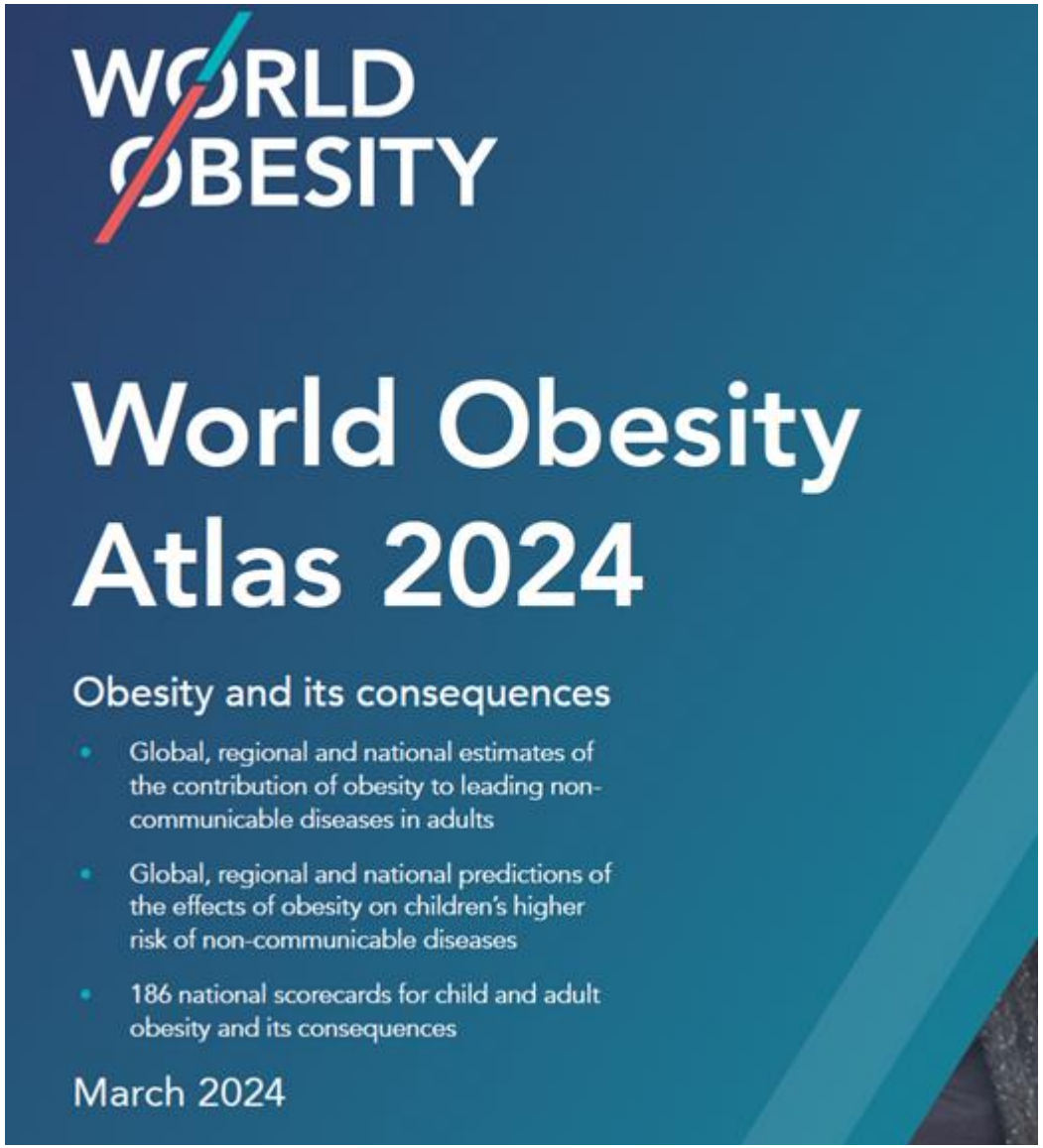
- **Urbanization drive bring changes** in agrifood systems
- **Urban residents get 90% of their food from market sources** → informal markets lead to food safety problems
- **Supermarkets + Convenience stores + Fast Food** = Ultraprocessed foods

➢ *Healthy food is more expensive and more difficult to find*

➢ *Eating in Restaurants means worst diet*



Obesity and the big numbers



Global Prevalence: **By 2035**, over **3.3 billion adults** are projected to have high body mass index (BMI), up from 2.2 billion in 2020. Among **children**, numbers are expected to rise from 430 million in 2020 to **750 million by 2035**.

Economic Cost: By 2035, the global economic burden of obesity is estimated to reach $4.32 trillion, equivalent to nearly 3% of global GDP.

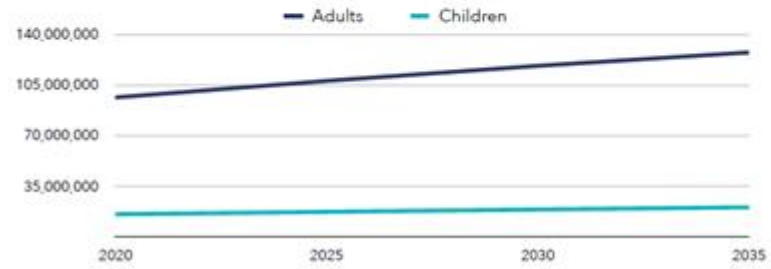
Health Impact: High BMI contributes to 5 million annual adult deaths, including 42% of diabetes deaths, 19% of coronary heart disease deaths, 17% of strokes & 5% of cancer-related deaths.

Regional Trends: By 2035, 77% of adults in the Americas and 51% in the Western Pacific are expected to have high BMI. LMIC will account for most global obesity cases.

Obesity: Brazil, Chile & Morocco cases

Brazil

Projected numbers of adults and children with high Body Mass Index (BMI)

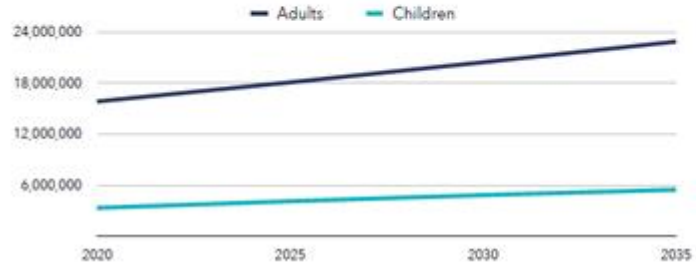


1.9% Annual growth rate in the projected numbers of adults with high BMI 2020–2035

1.8% Annual growth rate in the projected numbers of children with high BMI 2020–2035[1]

Morocco

Projected numbers of adults and children with high Body Mass Index (BMI)

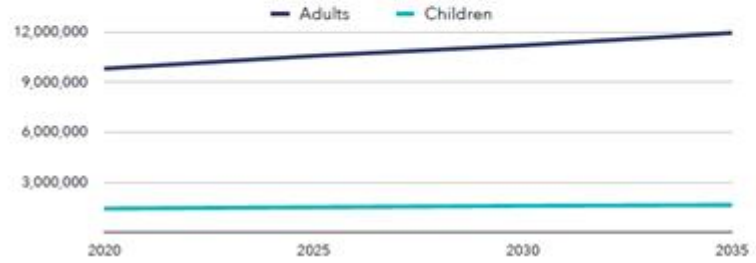


2.5% Annual growth rate in the projected numbers of adults with high BMI 2020–2035

3.4% Annual growth rate in the projected numbers of children with high BMI 2020–2035[1]

Chile

Projected numbers of adults and children with high Body Mass Index (BMI)



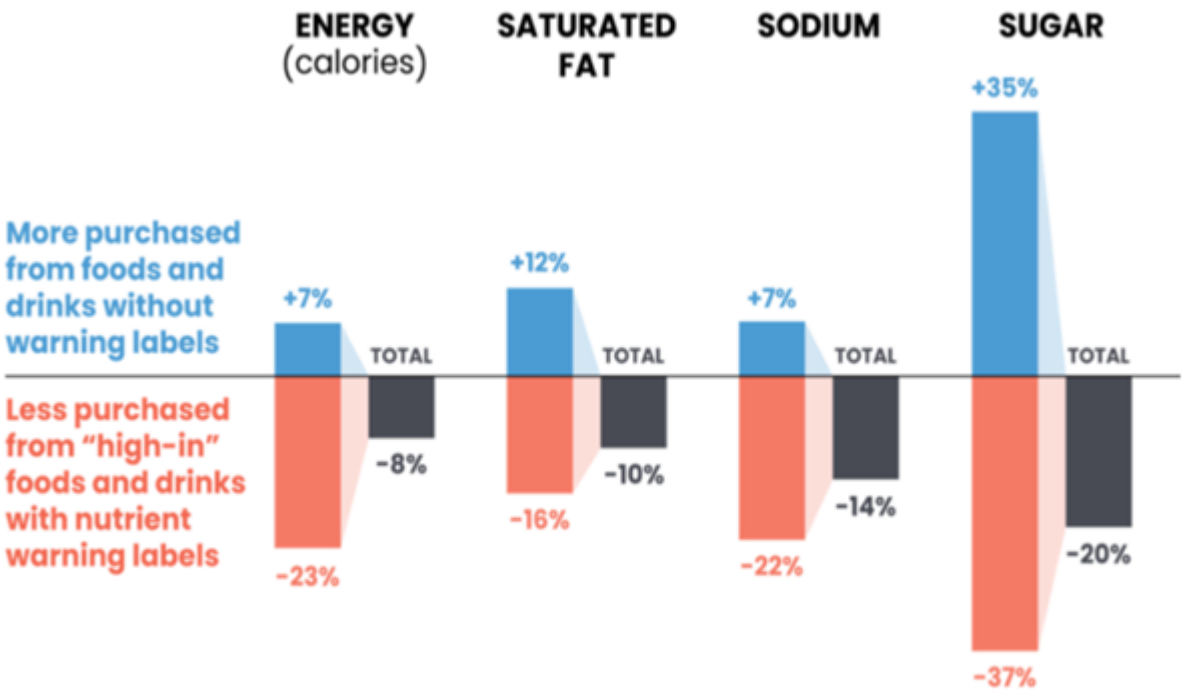
1.3% Annual growth rate in the projected numbers of adults with high BMI 2020–2035

0.9% Annual growth rate in the projected numbers of children with high BMI 2020–2035[1]

Policy Interventions to Tackle Obesity

- **Funding and Policy Integration**: Secure sustainable funding and integrate obesity into Universal Health Coverage (UHC) and health agendas.
- **Holistic Approaches**: Promote urban designs for physical activity and reform food systems for affordable, nutritious diets.
- **Education and Information:** Public awareness campaigns (marketing restriction and front-of-pack food labeling)
- **Global Collaboration:** Multisectoral partnerships to align objectives, share resources, and ensure accountability

Fighting obesity: Chile's food labelling approach



Results from Phase 2 of the nutrient warning label law (Global Food Research Program at the University of North Carolina, Chapel Hill)

Big Reductions in Unhealthy Purchases: 37% less sugar, 22% less sodium, 16% less saturated fat & 23% fewer total calories from black-squared labeled products

Big society impact: 73% drop in children's exposure to food marketing; 94% compliance w/ mandatory labeling.

Global Inspiration: At least 8 countries adopted similar policies; WHO endorsed front-of-package labels for healthier choices.

Chile's easily recognisable hexagonal warning labels – mandatory for products high in salt, sugar, saturated fat and calories – have had a real impact on consumer habits.

Family Farming: Maroc Vert, a good example

Resilient Agriculture through Crop Diversification: *Maroc Vert* supported smallholder farmers in transitioning to fruit tree cultivation on one million hectares, enhancing resilience to climate change and providing healthier food options

Empowering Women and Youth: Targeted training and resources for women and young family farmers promoted social inclusion and sustainable practices, strengthening community resilience and fostering better nutrition in rural areas.

Sustainable Water and Technology Use: Heavy investment in irrigation, seeds, and sustainable farming techniques enabled small-scale farmers to adapt to climate challenges

How climate change affect food systems

Climate change exacerbates food insecurity in tropical and subtropical regions, reducing global agricultural productivity by 21% since 1961.

Extreme weather increases food prices, pushing vulnerable populations toward ultra-processed products, worsening food and nutrition security.

Transitioning to sustainable food systems, including agroecology and climate-smart agriculture, is vital for achieving global climate and development goals.

Table 2 – Summary of the effects of elevated atmospheric CO_2 on the perceived and nutritional quality of various fruits and vegetables

Product	Perceived traits[1]	Nutritional traits[1]	Literature
Cabbage	↓taste (sugars)	↑vitamin C	Jin *et al.* (2009)
Carrot		↓protein, ↓vitamin C, ↓macronutrients, ↓micronutrients, ↓fatty acids, ↓amino acids	Azam *et al.* (2013)
Celery		↑vitamin C	Jin *et al.* (2009)
Grape	↓↑taste (sugars, acids), ↓↑wine quality		Bindi *et al.* (2001), Butterfield *et al.* (2000), Schultz (2000)
Lettuce	↑appearance (color)	↑antioxidants, ↑vitamin C, ↓macronutrients, ↓micronutrients	Becker and Kläring (2016), Giri *et al.* (2016), Jin *et al.* (2009)
Pear	↑appearance (size, color), ↑taste	↑macronutrients	Han *et al.* (2012), Ito *et al.* (1999)
Potato	↓appearance (shape), ↑appearance (color-greening), ↑taste (carbohydrates)	↑alkaloids, ↑nitrates, ↑vitamin C, ↓protein, ↓macronutrients, ↓micronutrients, ↓amino acids, ↑↓sugars	Högy and Fangmeier (2009), Kumari and Agrawal (2014), Vorne *et al.* (2002)
Radish		↓protein, ↓vitamin C,w ↓macronutrients, ↓micronutrients, ↓fatty acids, ↓amino acids	Azam *et al.* (2013)
Sour orange		↑vitamin C	(Idso *et al.*, 2002)
Spinach		↑antioxidants, ↓macronutrients, ↓micronutrients	(Giri *et al.*, 2016).
Tomato	↑taste (carbohydrates, sugars)	↓protein, ↑↓vitamin C, ↓macronutrients, ↓micronutrients, ↓organic acids	(Behboudian, Tod, 1995; Islam *et al.*, 1996; Khan *et al.*, 2013; Moretti *et al.*, 2010; Wei *et al.*, 2018)
Turnip		↓protein, ↓vitamin C, ↓macronutrients, ↓micronutrients, ↓fatty acids, ↓amino acids	(Azam *et al.*, 2013)

Sources: *CHRISTOPOULOS & OUZOUNIDOU, Climate Change Effects on the Perceived and Nutritional Quality of Fruit and Vegetables (2021) and ALPINO, MALZOTO, DE BARROS & DE FREITAS, The impacts of climate change on Food and Nutritional Security: a literature review (2020)*

From G20 to COP 30: Brazil leadership

- **Food Systems at the Core of Climate Action**: Despite contributing significantly to emissions and being critical for adaptation, food systems receive less than 4% of climate finance.

- **Urgency for Inclusive Climate Investments**: Transforming agrifood systems is essential to achieve climate resilience and tackle global hunger simultaneously.

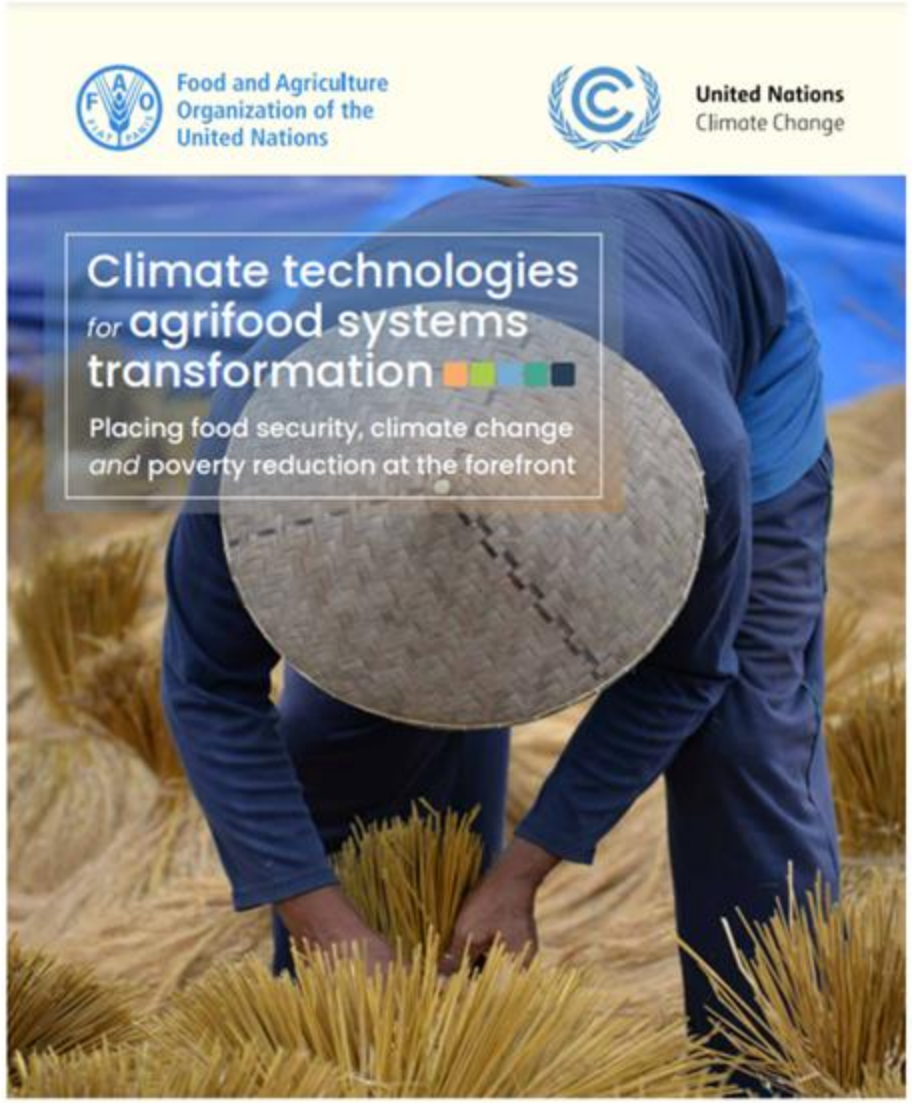
- **COP 30 can be a turning point**: Integrating food security into climate talks is vital for aligning with the 1.5°C target and addressing the escalating impacts of climate change on vulnerable populations.

GLOBAL ALLIANCE AGAINST HUNGER AND POVERTY

148 founding members: 82 countries, European Union, African Union, 24 International organizations, 9 financial institutions and 31 NGOs

https://globalallianceagainsthungerandpoverty.org/

Interlinkages: poverty, climate and hunger



- **Only 4.3% of global climate finance in 2019/2020 targeted agrifood systems**; just 1% went to adaptation efforts.
- **94% of NDCs include adaptation in agrifood systems**; 86% include mitigation, but 45% of technologies require external support.
- **Agrifood systems represent 80% of adaptation finance in food security projects**, compared to 9% allocated for mitigation efforts.

THANK YOU!

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