Food and Agriculture Organization of the United Nations

World Health Organization

THE NUTRITION CHALLENGE

FOOD SYSTEM SOLUTIONS

- Malnutrition in all its forms continues to be one of the greatest challenges faced by our generation.
- Unhealthy diets are an important cause of malnutrition. They are now responsible for more adult deaths and disability than alcohol and tobacco use.
- One driver of the nutrition situation is that our current food systems do not provide the healthy diets needed for optimal health and wellbeing.
- Measures that can effectively support food system transformation for enhancing healthy diets and improve nutrition exist.
- Members of Parliament from across the world gathered in Rome at the Second International Conference on Nutrition (ICN2) in November 2014 and underscored the importance of parliamentary dialogue to prevent malnutrition.
- Parliamentarians can guide and monitor public sector policies and budget allocations towards transforming food systems.
- Parliamentarians are well placed to facilitate the implementation of the ICN2 commitments made by countries under the umbrella of the Decade of Action on Nutrition (2016-2025), and hold key stakeholders accountable for their action.

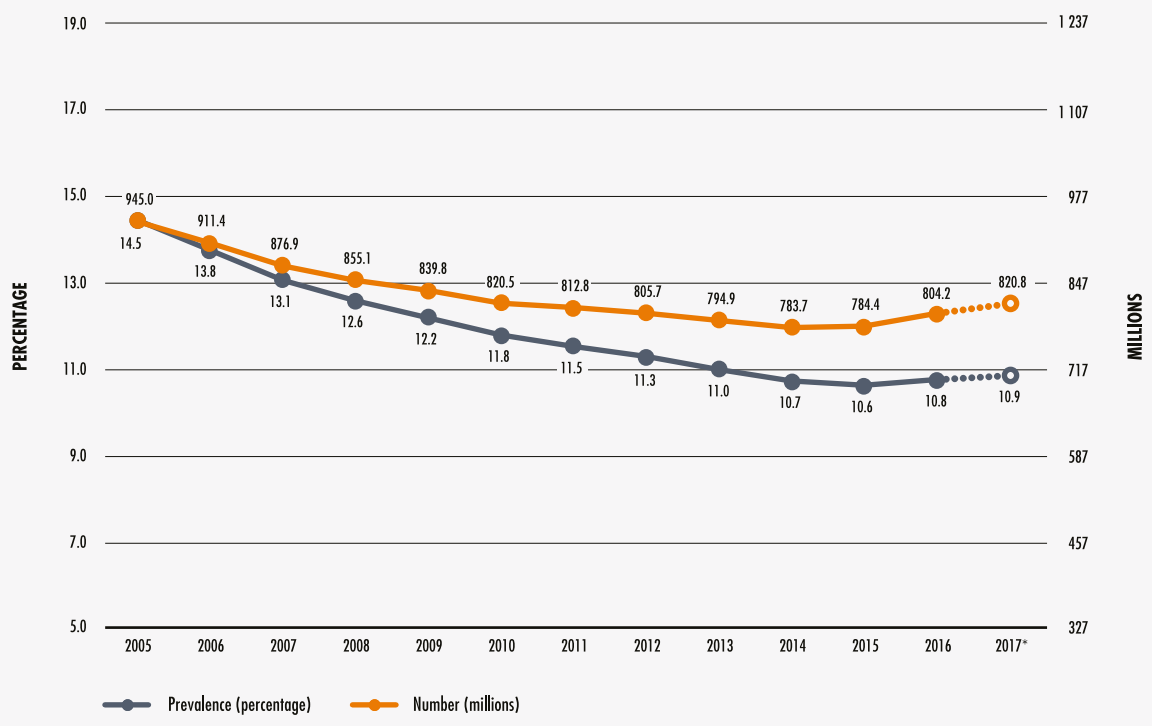
THE NUTRITION CHALLENGE AND FOOD SYSTEM SOLUTIONS

The way food is produced, marketed and made available to people has changed tremendously in the past 50 years. Many advances have been made, leading to more efficient food supply chains which have in turn generated improvements in food security and nutrition. Yet, malnutrition in all its forms continues to be one of the greatest challenges faced by our generation, and unhealthy diets are among the leading causes of death and disability.

In some parts of the world, people are not eating sufficient amounts of food to provide the calories, vitamins and minerals they need for optimal health, while in others, people are eating far more food than is necessary for their health and well-being, or simply too much of foods high in fat, sugar and/or salt.

This brief describes what parliamentarians need to know about the current nutrition situation in the world and how our food systems are shaping food environments that steer people towards unhealthy diets which are one of the causal factors of malnutrition. Parliamentarians are well placed to facilitate action to transform the world's current food systems. This brief gives concrete examples of measures through which policymakers can influence food systems so as to promote healthy diets and prevent malnutrition in all its forms, including undernourishment, stunting, wasting, micronutrient deficiencies, overweight and obesity, as well as diet-related non-communicable diseases (NCDs).

FIGURE 1: Prevalence and numbers of undernourished



Source: SOFI 2018[1]

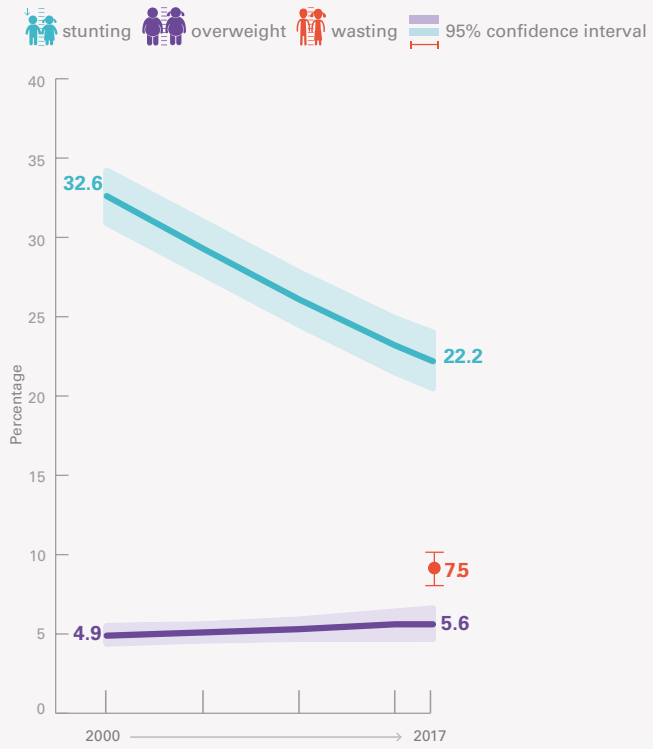
[1] **FAO, IFAD, UNICEF, WFP and WHO.** 2018. The State of Food Security and Nutrition in the World 2018. Building climate resilience for food security and nutrition. Rome, FAO. www.fao.org/state-of-food-security-nutrition

1. The current nutrition situation

1.1 Hunger and undernutrition

Hunger has decreased globally in recent decades, but since 2016 the number of undernourished people in the world has increased (**Figure 1**). Particularly worrying is stunting (low height for age) in children under five years of age, as this is a largely irreversible outcome of inadequate nutrition and repeated bouts of illness. Recent data tell us that stunting is declining, but it is not doing so fast enough (**Figure 2**). This is of special concern because stunting before the age of two could lead to poor cognitive and educational outcomes in later life. A stunted child is also at risk of developing obesity and NCDs in later life.

FIGURE 2: Percentage of stunted children (under 5)



Source: UNICEF,WHO,IBRD/WB. 2018.[2]

1.2 Deficiencies in vitamins and minerals

More than 2 billion people worldwide are affected by deficiencies in vitamins and minerals. These deficiencies are called 'hidden hunger', as people who suffer from them may look healthy and not consciously feel hunger. The consequences, however, are tragic. For example, anaemia affects over 613 million women of reproductive age worldwide and contributes significantly to maternal deaths[3]. While the causes of anaemia vary, it is estimated that half the cases are due to dietary deficiencies of iron, vitamin B12 and/or folic acid. Maternal

[2] **UNICEF, WHO, IBRD/WB**. 2018. Levels and trends in child malnutrition: key findings of the 2018 Edition of the Joint Child Malnutrition Estimates. www.who.int/nutgrowthdb/2018-jme-brochure.pdf

[3] **WHO**. 2014. Global nutrition targets 2025: anaemia policy brief. www.who.int/nutrition/publications/globaltargets2025_policybrief_anaemia

anaemia increases the risk of stillbirth, maternal and infant deaths, early child and maternal mortality and low birth weight of new-borns, as well as anaemia and poor growth and development in young children. It also impairs adult physical work capacity.

1.3 Overweight and obesity

Globally, nearly 2 billion adults are overweight, of whom 672 million are obese[4]. Obesity is on the rise in all regions of the world. In some areas, such as Africa, it is increasing at faster rates. It is not only adults who are affected: an alarming 38 million children under five years of age were overweight in 2017 globally[2] – an increase of 8 million since 2000. Overweight and obesity are risk factors for many NCDs such as heart diseases, stroke, type 2 diabetes, and some cancers. These NCDs are economically costly to societies, owing to high treatment costs, lost income and earning potential, and reduced labour productivity. Moreover, obese people may also suffer low self-esteem, depression and social isolation.
These nutritional problems are a cause for great concern, posing a significant challenge. They call for urgent and scaled-up action by countries and their partners in line with the international commitments made at the Second International Conference on Nutrition (ICN2, 2014), the UN Decade of Action on Nutrition 2016–2025, and the 2030 Agenda for Sustainable Development.

1.4 Drivers of the current nutrition situation

Malnutrition in all its forms has many causes. An important one is low-quality diets. Recent decades have seen a shift in dietary patterns worldwide. On the one hand, rising incomes in certain parts of the world have led to greater demand for, and consumption of, nutrient-rich foods such as fruits, vegetables, wholegrains and seafood. On the other hand, there has been a parallel – and more rapid – increase in the consumption of highly processed foods and beverages, which are often high in fat, sugars and/or salt, and processed meat[5]. While in high-income countries these changes have already occurred, low- and middle-income countries (LMICs) are catching up very fast (**Figure 3**). Although diets are becoming more diversified globally, evidence shows that certain foods that constitute a healthy diet, such as fruits and vegetables are not being consumed in enough quantities to meet recommended intakes.

A healthy diet is one that meets the nutritional needs of individuals by providing sufficient, safe, and diversified foods to maintain active life and reduce risks of disease. It contains fruits, vegetables, legumes (e.g. lentils, beans), nuts and whole grains (e.g. unprocessed maize, millet, oats, wheat, brown rice), and is low in fats (especially saturated fats), free sugars and salt[6]. Unhealthy diets are an important cause of malnutrition. They are now responsible for more adult deaths and disability than alcohol and tobacco use (**Figure 4**).

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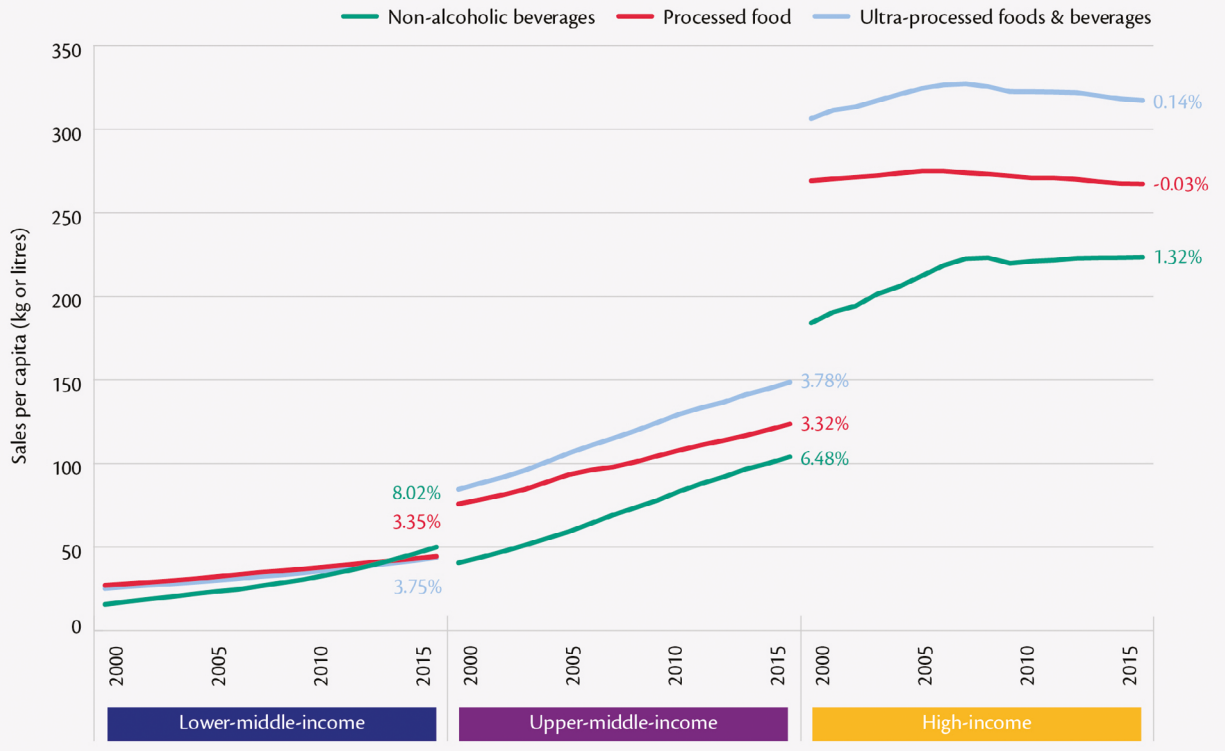
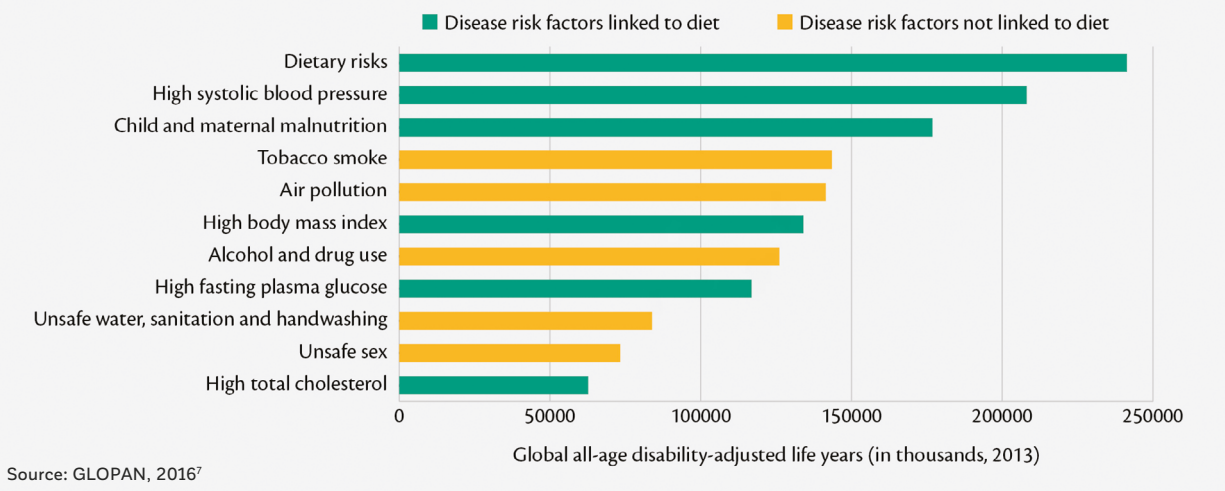
[4] **NCD Risk Factor Collaboration**. 2017. www.ncbi.nlm.nih.gov/pmc/articles/PMC5735219/pdf/main.pdf
[5] **Inamura F., Micha R., Kathibzadeh S., Fahimi S., Powels J., Mozaffarian D.** 2015. Dietary quality among men and women in 187 countries in 1990 and 2010: a systematic assessment. The Lancet, Volume 3, Issue 3, PE132-E142, March 01, 2015. www.ncbi.nlm.nih.gov/pubmed/25701991
[6] **WHO** (2018) Fact sheet: Healthy diet, Geneva. www.who.int/news-room/fact-sheets/detail/healthy-diet
[7] **Global Panel on Agriculture and Food Systems for Nutrition.** 2016. Food systems and diets: Facing the challenges of the 21st century. London, UK. www.glopan.org/foresight

FIGURE 3: Trends in per capita sales volumes of non-alcoholic beverages, processed foods and ultra-processed foods by country income group, 2000–2015



Source: GLOPAN, 2016[7]

FIGURE 4: Six of the top 11 risk factors driving the global burden of disease are related to diet



Source: GLOPAN, 2016[7]

2. Food systems

2.1 Why are diets changing? The role of the food environment and food systems

In addition to a number of 'lifestyle' factors related to growing levels of urbanization, income, and increasing demands on women's time[8], what people eat is greatly affected by the foods physically available to them, the prices at which these foods are sold, and the extent to which they are culturally and socially acceptable.
The food environment is the space where consumers engage with a food system to make their decisions about acquiring, preparing and consuming food. It shapes people's dietary choices and influences their nutritional status[9].

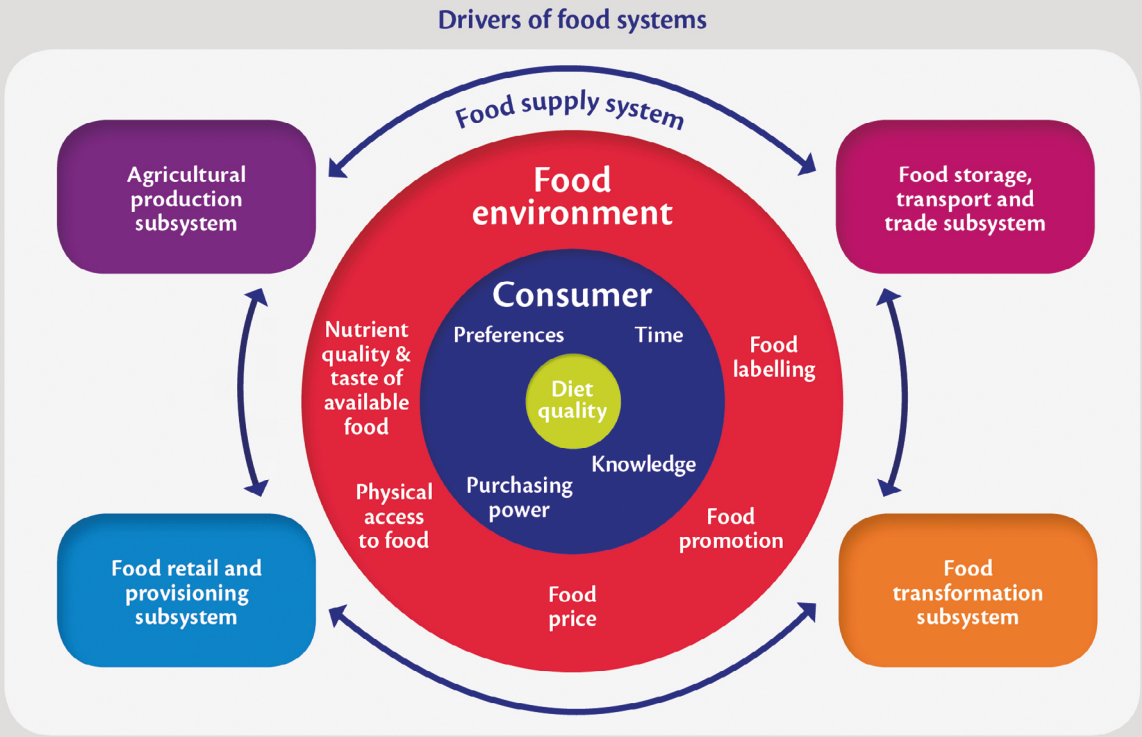
The food environment is influenced by all sub-systems of a given food system, as depicted in **Figure 5**. For example, energy-dense, processed food products which are often low in vitamins and minerals, are much more readily available and often cheaper than more nutrient-rich foods due to technological advances and market liberalization[10]. Industrial food production has also led to widespread use of agro-chemicals and antibiotics, which can have adverse health effects. Rapid rates of urbanization, often accompanied by increasing demand for highly processed convenience foods, are poised only to exacerbate these trends. Climate change likewise poses serious threats along the whole food system.

[8] **FAO**. 2004. Globalization of food systems in developing countries: impact on food security and nutrition. FAO food and nutrition paper 83. www.fao.org/3/a-y5736e.pdf - **Reardon, T., Tschirley, D., Dolislager, M., Snyder, J., Hu, C. & White, S**. 2014. Urbanization, diet change, and transformation of food supply chains in Asia. East Lansing, Michigan State University, Global Center for Food System Innovation.

[9] **HLPE.** 2017. Nutrition and Food Systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome. www.fao.org/3/a-i7846e.pdf

[10] **Popkin BM., Adair LS., Ng SW**. 2012. Global nutrition transition and the pandemic of obesity in developing countries. Nutrition Reviews, 2012 Jan;70(1):3-21. www.ncbi.nlm.nih.gov/pubmed/22221213 | **Monteiro CA., Moubarac JC., Cannon G., Ng SW., Popkin BM**. 2013. Ultra-processed products are becoming dominant in the global food system. Obesity Reviews, 2013 Nov;14 Suppl 2:21-8. www.ncbi.nlm.nih.gov/pubmed/24102801

FIGURE 5: Linkages between food systems, food environment and diet quality



Source: GLOPAN, 2016[7]

2.2 What can policymakers do to change food systems?

One driver of the current nutrition situation is that our current food systems do not provide the healthy diets needed for optimal health and wellbeing. The challenge today is to improve food environments by making healthy diets more readily available and affordable, especially for vulnerable groups. Food systems play a role in all forms of malnutrition. The part they play in driving the overweight and obesity crisis may not yet be fully appreciated, especially in countries that have until recently been struggling to combat hunger and undernutrition. Currently, many policymakers outside the health sector may have a limited understanding of the nature and magnitude of the problems posed by NCDs, overweight and obesity. The prevention of obesity and NCDs requires action on the part of everyone.

Parliamentarians are well placed to guide and monitor public sector policies and budget allocations. They can also encourage the adoption of the right incentives and disincentives for action by businesses and consumers in order to transform food systems so that these deliver healthier diets.

Measures that can effectively support healthy diets and improve nutrition exist. Depending on the individual country context, various policy and legislative measures can be taken within the four different sub-systems of a food system (**Table 1**).

TABLE 1

Possible measures to improve food environments that support healthy diets		
Food sub-systems	**Measures**	**Impact on the food environment**
Agricultural production	• Encourage policies and investments that support diversification and the production of nutrient-rich foods (e.g. fruits and vegetables and legumes). • Promote value chain development for nutrient-rich food crops • Ensure that agriculture research investments focus not only on staples but also on nutrient-rich crops	Actions on several of the food sub-systems simultaneously will increase the **availability**, **affordability** and **desirability** of nutrient-rich foods, while making foods high in fat, sugars and/or salt less available and affordable
Food storage, transport and trade	• Invest in transport and cold-chain infrastructure in order to reduce food loss • Encourage domestic trade, rural-urban linkages, short food supply chains (where feasible) for nutrient-rich foods, especially for vegetables, fruits, legumes and nuts • Lower tariff and non-tariff trade barriers for fruits and vegetables, especially during off-season periods, or increase import tariffs on foods high in fats, sugars and/or salt	
Food transformation	• Encourage food reformulation laws • Take measures to introduce food and nutrition labelling laws • Support the establishment of investment funds for start-up Small and Medium Enterprises that produce nutrient-rich foods • Create incentives for processing techniques that reduce costs and increase the nutritional value of foods	
Food retail and provisioning	• Support policies to improve food safety in informal and wet markets • Offer price incentives to encourage street vendors to use ingredients of better nutritional quality while ensuring food safety standards • Impose taxes to discourage the consumption of foods high in fat, sugar and/or salt, such as sugar-sweetened beverages • Support the review of food subsidies, to cover foods such as fresh fruits, vegetables and legumes and make them affordable to consumers • Implement planning regulations and investments to support wholesale markets, wet markets and informal retailers that provide fresh produce to consumers especially low-income populations • Establish social protection policies and programmes to ensure that nutrient-rich foods can be accessed by vulnerable populations – e.g. school food and nutrition programmes that provide nutrient-rich foods, or conditional cash transfers to facilitate access to fresh fruits and vegetables • Introduce legislation to ensure institutional procurement from local smallholder farmers • Apply zoning for fast food outlets, especially around schools	
Other	• Introduce strategies and actions to promote, protect and support breastfeeding • Control the marketing of foods and beverages targeted at children • Introduce mandatory regulation of advertising to children, and of other forms of marketing of food and beverages to children • Support mass media informational campaigns and social marketing campaigns encouraging healthy eating • Support education reforms to introduce food and nutrition education into school curricula	

SOURCE: WHO, 2010; FAO, 2016; FAO, 2017; GLOPAN, 2016; HLPE, 2017; WHO, 2016; WHO/UNDP 2018; INFORMAS website[11]

[11] **WHO**. 2010. Set of recommendations on the marketing of foods and non-alcoholic beverages to children. www.who.int/dietphysicalactivity/publications/recsmarketing | **FAO**. 2016. *Influencing Food Environments for Healthy Diets*, Rome, Italy. www.fao.org/3/a-i6484e.pdf | **FAO**. 2017. Nutrition-sensitive agriculture and food systems in practice. Options for intervention. Rome, Italy. www.fao.org/3/a-i7848e.pdf | **Global Panel on Agriculture and Food Systems for Nutrition**. 2016. Food systems and diets: Facing the challenges of the 21st century. London, UK | **HLPE**. 2017. Nutrition and food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome | **WHO**. 2016. Fiscal policies for diet and the prevention of non-communicable diseases. www.who.int/dietphysicalactivity/publications/fiscal-policies-diet-prevention | **WHO & UNDP**. 2018. What legislators need to know. www.who.int/iris/handle/10665/272640 **INFORMAS** (International Network for Food and Obesity / Non-communicable Diseases [NCDs] Research, Monitoring and Action Support). www.informas.org

Examples of how governments are changing the food environments in their countries are given below. In Chile (**Box 1**) legislative instruments on labelling have been made use of to empower consumers to make healthy food choices. In Mozambique (**Box 2**) the government is working to ensure that school meals are healthy and are linked to direct purchase from local farmers. In **Box 3**, examples from Canada and Argentina demonstrate efforts to reduce the use of industrially-produced trans fat in the diet.

BOX 1

Making it easier to choose nutritious foods

Chile's food labelling law

In June 2016, the Government of Chile enacted the Law of Food Labelling and Advertising to counter alarming rates of obesity.

In addition to the placement of a highly visible black octagon on all food items that exceed the established limit of critical nutrients (sugars, sodium, calories, saturated fats), these same food items cannot be advertised during the time that children watch TV, cannot be sold on school premises and cannot be associated with 'presents' or 'come-ons' such as toys, games or prizes.

The law was introduced in gradual stages in order to give the food industry time to adapt. By the end of 2017, 20% of food industry had reformulated their product lines that were affected by the black label, and 68% of the population had changed their food purchasing habits.

BOX 2

Providing a healthy school food environment

School feeding in Mozambique

In 2013, the Government of Mozambique, in collaboration with FAO, set up a new National School Feeding Programme (PRONAE) based on local procurement, with direct purchase from smallholder farmer organisations, processors and traders.

Coupled with nutrition education, the programme aimed to improve the quality of school meals, provide a greater diversity of food, and promote healthy eating habits. It also aimed to create a new market for fresh produce for local farmers, thus benefitting both smallholder farmers and consumers. In its initial phase, diversified menus, including fresh foods produced locally by smallholder farmers, were introduced in 26 schools. The programme is currently being scaled up.

BOX 3

Agricultural policies to support elimination of trans fat in food in Canada and Argentina

Industrially-produced trans fat in the diet is associated with a higher risk of heart disease and death. To reduce their use, agricultural policies can promote the supply and use of healthier oils. For example, in conjunction with its voluntary limits on trans fats, Canada provided research and development support to Canadian oil producers to encourage them to produce oils that are naturally high in unsaturated fat. These oils have been used successfully to replace oils rich in trans fat traditionally used for deep-frying foods in the United States of America and Canada. Similarly, in Argentina, a cooperative agreement was put in place to improve the availability of healthy fats and oils to replace fats high in trans fat. This proved instrumental in driving the reformulation of Argentinian packaged foods.

2.3 What happens if we do nothing?

Malnutrition is very costly: for example, the costs associated with obesity alone represent US$2 trillion a year – equivalent to 2.8% of global GDP[12]. From 2011 to 2025, the economic burden of NCDs (mainly attributable to cardio-vascular diseases) will add up to USD 7 trillion[13]. This is a tremendous economic burden, especially for LMICs. Investing in ending malnutrition is one of the most cost-effective steps governments can take: preventing malnutrition delivers US$16 in returns on investment for every US$1 spent.

2.4 Opportunities to reform food systems

The UN Decade of Action on Nutrition and the 2030 Sustainable Development Goal Agenda present opportunities to reform food systems so as to deliver healthy diets, as under both frameworks, countries have committed to ending all forms of malnutrition, leaving no-one behind.

The 2018 State of Food Security and Nutrition in the World (SOFI) indicates that stunting and wasting prevalence in children are not going down fast enough.

Additionally, we are faced with the rapidly increasing prevalence of overweight and obesity across all regions of the world[14]. No country has so far been successful in reversing the rising trend of obesity. It is important to monitor and assess the impact of policies and laws and to share experiences across countries in order to accelerate progress.

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[12] **McKinsey Global Institute**. 2014. Overcoming obesity: An initial economic analysis. Discussion paper. www.mckinsey.com/~/media/McKinsey/Business%20Functions/Economic%20Studies%20TEMP/Our%20Insights/How%20the%20world%20could%20better%20fight%20obesity/MGI_Overcoming_obesity_Full_report.ashx

[13] **William A. Zoghbi et al**. 2014. Sustainable Development Goals and the Future of Cardiovascular Health: A Statement From the Global Cardiovascular Disease Taskforce. Journal of the American Heart Association, 2014 Oct; 3(5): e000504. www.ncbi.nlm.nih.gov/pmc/articles/PMC4323800/

[14] **FAO, IFAD, UNICEF, WFP and WHO**. 2018. The State of Food Security and Nutrition in the World 2018. Building climate resilience for food security and nutrition. Rome, FAO. www.fao.org/state-of-food-security-nutrition

United Nations Decade of Action on Nutrition 2016–2025

Member States gathered at the Second International Conference on Nutrition (ICN2) in Rome in 2014 emphasized that a food system transformation is essential to eradicating hunger and preventing all forms of malnutrition worldwide. www.fao.org/resources/infographics/infographics-details/en/c/266118/. Members of Parliament from across the world gathered at the ICN2 underscored the importance of parliamentary dialogue to prevent malnutrition.

In 2015, the 2030 Agenda for Sustainable Development welcomed the ICN2 outcomes and reiterated the need to end all forms of malnutrition.

In 2016, the United Nations General Assembly proclaimed 2016–2025 the United Nations Decade of Action on Nutrition (Nutrition Decade) and mandated the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) to co-lead its implementation and to develop a work programme to this effect. www.un.org/nutrition

The Nutrition Decade advocates for an increase of nutrition investments and implementation of policies and programmes to improve food security and nutrition. It envisions a world where all food system actors coordinate action and strengthen collaboration so that all people at all times and at all stages of life have access to sustainable, affordable, diversified, safe and healthy diets.

3. A call to action

No country in the world is immune to malnutrition in some form or other. In addressing this challenge, everybody has a role to play: the UN, governments (and specific ministries within them), communities and individuals, the private sector and civil society. There is a need to create a conducive environment supported by effective food system policies that will lead to society-wide behaviour change. Unless policy makers make bold decisions to combat malnutrition in all its forms, everyone will pay a heavy price in the form of an increased disease burden, higher mortality rates, greater economic losses and faster and more extensive degradation of the environment. It is time for governments, in view of the urgency, to take responsible action.

The Nutrition Decade is our unprecedented opportunity to support context-specific actions and investments. Under the Nutrition Decade, governments are encouraged to make SMART commitments and to implement the Decade work programme.

Parliamentarians are well placed to facilitate the implementation of the ICN2 commitments made by countries under the umbrella of the Nutrition Decade to prevent malnutrition in all forms through food system transformation, and hold key stakeholders accountable for their action.

UNITED NATIONS DECADE OF
ACTION ON NUTRITION
2016-2025

Website: www.un.org/nutrition
Resource guide: www.fao.org/3/ca1505en/CA1505EN.pdf

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UN INTERAGENCY TASK FORCE ON NCDs
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