Chapter 16: Legal responses to poor nutrition: undernutrition, overweight and obesity

SUMMARY POINTS

· The human right to food, as recognized in the International Covenant on Economic, Social and Cultural Rights encompasses a right to be free from hunger, and to have an adequate supply of safe and nutritious food.

· Many low- and middle-income countries are moving towards a “Western diet” that is higher in fats, sugars, refined carbohydrates, meat and animal products, but poorer in vegetables, legumes and coarse grains. Obesity and diet-related risk factors are contributing to the rapid rise of diabetes and other noncommunicable diseases, including in countries that continue to face a substantial burden from infectious diseases and undernutrition.

· Legal and regulatory policies for reducing diet-related disease cover three main policy domains: the food environment (including the retail food environment), the food production system (including regulation of the food supply chain and the nutritional content of food), and consumer behaviour.

· Improvements in agricultural and fiscal policies can benefit health; for example, by abolishing subsidies on sugar and other sweeteners, or by focusing investment away from the manufacture and export of oils that are high in saturated fats.

· Food companies use a wide variety of sophisticated advertising and promotional techniques to manipulate and shape children’s food preferences. A number of countries have implemented legal controls on food advertising and promotion in order to protect children from excessive exposure to advertising and promotion of energy-dense but nutrient-poor foods, including through the media.

· WHO has recommended that settings where children gather (including schools, pre-schools, and playgrounds) should be free from “all forms of marketing of foods high in saturated fats, trans-fatty acids, free sugars, or salt”. Governments can improve the school food environment by directly restricting the advertising and promotion of unhealthy foods in schools, and ensuring that all food sold or made available on school grounds during the school day is safe to eat and meets minimum nutritional criteria.

· Food labelling, including nutritional information panels, front-of-pack interpretive labelling schemes, warning labels and suitably regulated health claims, may assist consumers to choose more nutritious foods. Countries may also consider extending interpretive nutrition labelling to restaurants and food stalls.

· Imposing non-trivial taxes on sugar-sweetened beverages and on foods that are high in salt, saturated fat, and/or added sugar is a potential strategy for raising the prices of these products in order to reduce consumption. Quite apart from their observed impact on consumption, food and beverage taxes may encourage product reformulation by manufacturers, resulting in healthier products that can compete more effectively on price.

· Food and beverage taxes may also provide an additional revenue stream for governments to.
Invest in health.

- Governments may consider sales bans or mandatory food standards where there is a clear case for eliminating harmful substances from the food supply (e.g. trans-fat). Mandatory standards may also be considered appropriate where voluntary or co-regulatory processes for food reformulation are moving too slowly or have proved ineffective in meeting national nutritional goals and targets; for example, in reducing population salt intake.

- Governments may also adopt regulations or mandatory standards in order to implement food fortification programmes to improve micronutrient deficiencies. Examples include universal iodization of salt, and mandatory fortification of wheat flour with iron, folic acid, and/or zinc.

- There are many ways that law can support a healthy food and physical activity environment, including through the use of zoning and planning controls, and incentives for the establishment of stores and stalls selling healthy and fresh food.

- Undernutrition remains a major problem in many countries, particularly developing countries. Legal recognition of the right to adequate food and nutritional security provides the basis for holding governments accountable for policies to address hunger and micronutrient deficiencies. In some countries, this right may be enforced through national courts.

- As illustrated by Brazil’s Bolsa Familia, a cash transfer paid to the female head of household may be an effective strategy for increasing food security, and providing a flexible safety net for other needs.

Introduction

The right to food is a human right recognized in the International Covenant on Economic, Social and Cultural Rights (ICESCR), the Convention on the Rights of the Child, and a number of other human rights instruments. The right to food in the ICESCR encompasses the right to be free from hunger, as well as the right of everyone to access adequate, safe and nutritious food. Discharging these obligations is one of the core obligations owed by States under the right to health.

Diets in low- and middle-income countries are changing rapidly. Countries that have traditionally faced problems with undernutrition and infectious diseases are now also facing a rapid upsurge in obesity and dietary risk factors, leading to diabetes and other noncommunicable diseases. In 2010, dietary risk factors, combined with lack of physical activity, were responsible for 10% of the global burden of disease, and 12.5 million deaths. There are many factors that are thought to be contributing to changing dietary patterns and to the burden of diet-related disease. These include:

- rising incomes due to economic development (leading to diets richer in sugar and fats, and access to labour-saving technology, including motor vehicles);

- urbanization (resulting in greater access to a wider range of processed foods, greater exposure to food advertising, and reduced levels of physical activity);

- trade liberalization policies (leading to expanded international trade in food products including, for example, imports of low-quality, fatty meat products);
• developments in food technology (leading to the cheap production of vegetable oils and caloric sweeteners);

• foreign direct investment in national food systems (supermarkets replacing local markets); and

• the advertising of processed, ready-made foods that are high in salt, sugar and saturated fat.9

These developments have hastened the convergence towards a “Western diet” that is higher in fats, sugars, refined carbohydrates, meat and animal products, but poorer in vegetables, legumes and coarse grains.

In 2013, the World Health Assembly adopted a set of voluntary global noncommunicable disease (NCD) targets, to be met by 2025, as part of the global monitoring framework on the prevention and control of NCDs.10 These targets include a 0% increase in obesity and diabetes, a 30% relative reduction in population salt intake, and either a 25% relative reduction in the prevalence of raised blood pressure or containing the prevalence of raised blood pressure, according to national circumstances (see Section 12.1(a)).11 Reducing salt intake, replacing trans-fats with unsaturated fats in food, and public education campaigns on diet and physical activity have also been identified as very cost-effective priorities for governments.12

Some scholars have emphasized the contribution that large food companies can make to reducing diet-related disease through public–private partnerships and voluntary actions; for example, by reformulating products and shifting advertising expenditure towards healthier products.13 Others, however, have pointed to the food industry’s role in undermining and weakening public health policies and programmes, and to the absence of evidence that voluntary actions are effective in achieving significant reductions in obesity or in diet-related risk factors.14 Some have pointed to similarities between the behaviour of tobacco companies and that of food and beverage companies, arguing that the latter are vectors for the spread of dietary risk factors for NCDs.15 Many scholars would agree that there is a need for greater accountability by the food industry for its policies and practices, and that law is an important tool for responding to diet-related disease.16

### 16.1 Food policy domains

Legal and regulatory policies for reducing diet-related disease can be categorized in a variety of ways.17 Governments can adopt laws that seek to improve nutrition and to reduce obesity by creating healthier food environments that offer easier access to healthy foods at affordable prices. Secondly, they can impose standards to specify or improve the nutritional content of food itself, and to regulate the food supply chain and the systems responsible for production and distribution of food. Thirdly, governments can pass laws that seek to assist consumers to make healthier choices. This categorization draws attention to three overlapping policy domains:

• the food environment, including the food retail environment;
• the food production system, including the food supply chain and food content regulation; and

• consumer behaviour.

These domains by no means exhaust the range of legislative actions that governments may take in support of obesity prevention and better nutrition. For example, governments have used legislation to establish health promotion agencies, prevention councils and other processes to better coordinate government efforts to improve food and physical activity environments. Spain’s law on food safety and nutrition commits the government to establishing an intersectoral strategy on nutrition, physical activity and prevention of obesity, to be reviewed every five years, and also prohibits discrimination on grounds of overweight or obesity.\(^\text{18}\)

Laws that shape the broader environment in order to encourage healthier lifestyles and access to healthy and affordable food cover a broad area. They include nutrition support programmes for low-income and disadvantaged groups, laws imposing nutritional requirements on foods sold or made available in schools, zoning and licensing controls affecting retail food businesses, and efforts to create walkable, more physically active neighbourhoods through investment in infrastructure. Laws that target the food production system include laws removing agricultural subsidies for the production of cheap fats and sweeteners (including sugar and high-fructose corn syrup),\(^\text{19}\) and laws restricting or banning the sale of foods containing harmful ingredients (e.g. trans-fats).\(^\text{20}\) For example, in its 2014 budget, Malaysia abolished its subsidy on sugar, removing a costly source of government expenditure that also contributes to over-consumption of sugar-sweetened products.\(^\text{21}\)

Laws encouraging healthier choices by consumers include labelling laws that require food manufacturers to list the ingredients of food products and their nutritional value on food packages, tax rebates for the purchase of exercise or fitness equipment, controls on the kind of health claims that can be made in relation to food, and laws restricting the advertising of certain foods, particularly to children.

The WHO Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020 recognizes that a range of policy changes will be required, across a number of government sectors, in order to make progress.\(^\text{22}\) Laws and regulations do not exist in isolation, but should be included, where appropriate, as part of broader strategies to promote the benefits of a healthy diet, to reduce poverty, to increase food security, and to ensure an environmentally sustainable diet. The following sections give examples of legal and regulatory actions that governments might consider, acknowledging that the context and exact form of these interventions may vary substantially between countries.

### 16.2 Economic instruments

The WHO Global Strategy on Diet, Physical Activity, and Health recognizes that fiscal policies, including taxes and subsidies, can play a role in fighting obesity and poor nutrition.\(^\text{23}\) Imposing non-trivial taxes on sugar-sweetened beverages, and on foods that are high in saturated fat, added salt and/or added sugar, is a potential strategy for raising the prices of these products in order to reduce consumption.\(^\text{24}\) Quite apart from their observed impact on consumption, tax increases may also...
encourage food reformulation by manufacturers, resulting in healthier products that can compete more effectively on price. Since taxes are unlikely to cause consumers to avoid the taxed foods entirely, taxes may also generate additional revenues for government, and possibly fund social welfare programmes giving low-income groups better access to healthier foods.

Food and beverage taxes need to be designed carefully. Assuming that the tax is entirely passed on to the consumer, the overall health effects of the tax will depend, firstly, on how the price increases that result from the tax alter levels of consumption of the affected foods. To achieve a beneficial health effect, governments need to adopt a tax rate that is high enough to change consumption patterns, and to target the tax effectively so that it applies to the appropriate category of unhealthy foods, or alternatively, to over-consumed ingredients or nutrients. Given the persistence of demand for certain foods despite a higher price (inelasticity of demand), one review suggests that food taxes need to be substantial (at least 20%) in order to have a significant health impact.25

The health impact of a tax will also be affected by the substitution effects of the tax (for example, whether there are cheaper and healthier products that can be substituted for the taxed product), and by income effects (for example, whether price increases for more highly taxed products mean that consumers have less income to purchase healthy food).26 Since those with lower incomes are likely to be most sensitive to price increases that result from the tax,27 governments should carefully consider the nutritional consequences of food substitution resulting from the tax,28 especially in settings where over- and under-nutrition coexist.29 In October 2011, Denmark introduced a tax on foods containing more than 2.3% saturated fat, although it was repealed a year later due to concerns about administration costs, its impact on employment, and concerns that consumers were avoiding the tax altogether by making shopping trips to Germany and Sweden.30 In 2013, Tonga – which has an obesity rate of nearly 60%31 – introduced an excise tax of 50 cents per litre for sugar-sweetened beverages, and T$ 1 per kilogram for a range of animal fats, in order to discourage consumption of fatty meat, including mutton flaps and turkey tails.32

Sugar-sweetened beverages (SSBs) have been suggested as an appropriate candidate for taxation, since they have no nutritional benefits, are a major source of calories in many countries and are associated with weight gain and diabetes,33 and since people do not compensate for the calories they consume from sweetened beverages by reducing their intake of other foods.34 One study estimates that 184,000 deaths per year are attributable to consumption of SSBs, due to diabetes, cardiovascular disease and cancer.35 In January 2014, Mexico introduced a tax of one peso per litre (about 10%) on SSBs.36 During that year, the rate of reduction in consumption of SSBs increased, reaching 12% on average, and 17% among the lowest socioeconomic group.37

Evidence suggests that demand for SSBs is highly elastic. For example, the pooled price elasticity from one meta-analysis of nine studies suggested that a 10% increase in the price of SSBs could result in a reduction in consumption of around 13%.38 The authors of this study also conclude that taxes on SSBs may result in modest reductions in obesity within the population.39 Scholars have pointed out that a tax on the added sugar content on SSBs, regularly indexed, would prevent substitution in favour of other products with high sugar that were not taxed, and also provide an incentive for manufacturers to reduce the added sugar in SSBs.40 By reducing sugar intake, a tax on SSBs may also improve dental health, particularly in children.41
In addition to taxing over-consumed foods or nutrients, governments may consider subsidizing less energy-dense foods, such as fresh fruit and vegetables, especially among low-income groups. Governments can support the price and availability of healthier foods in a variety of ways, including through production subsidies, quotas, payments to reduce the retail price of fruit and vegetables, or by providing cash vouchers directly to eligible low-income and disadvantaged recipients. Indonesia transitioned from a fiscally unsustainable universal rice subsidy to targeting low-income individuals with ration cards in 1997, reaching 85% of eligible persons within a year. Governments may consider production subsidies where market prices are too low to encourage sufficient production, or in order to encourage the fortification of foods with essential micronutrients. These may take a variety of forms, including tax exemptions, import preferences, assistance with start-up, and training. Governments can also reduce tariffs on healthy foods, which may be administratively simpler and align with trade liberalization priorities.

To achieve their intended effect, food subsidies should be targeted appropriately, avoiding foods with minor health benefits and foods that exacerbate existing dietary imbalances such as the over-consumption of saturated fats and caloric sweeteners. Food subsidies are unlikely to be sustainable if spread across too many food products, and their impact on the target (poor) population group should be carefully monitored.

### 16.3 Food advertising controls

Laws that restrict the advertising and promotion of foods that are high in saturated fat, salt or added sugar – particularly to children – may be an effective way of moderating demand for foods that are over-consumed, and which contribute little to a healthy diet. One model predicts that eliminating food marketing targeting children in the United States might have prevented obesity in up to one third of obese children. In the United Kingdom, restrictions on food advertising to children were implemented in 2005 as part of a co-regulatory approach to advertising regulation (see Box 2.1). Between 2005 and 2009, this resulted in a 37% decline in advertisements aimed at children for products high in fat, salt, or sugar (see Box 16.1).

**Box 16.1: Restricting food advertisements that target children: the Code of Broadcast Advertising, United Kingdom**

In the United Kingdom, broadcast advertising is regulated by the UK Code of Broadcast Advertising (BCAP Code), which was written and is reviewed by an industry body, the Broadcast Committee of Advertising Practice (BCAP) under delegation from Ofcom, the government telecommunications regulator. The BCAP Code, revised in 2010, includes a ban on the advertising of high fat, high salt or high sugar foods to children:

Section 32.5. These products may not be advertised in or adjacent to programmes commissioned for, principally directed at, or likely to appeal particularly to audiences below the age of 16:

Section 32.5.1 food or drink products that are assessed as high in fat, salt or sugar (HFSS) in accordance with the nutrient profiling scheme published by the Food Standards Agency (FSA) on 6 December 2005.
In Quebec, commercial advertising directed at persons under 13 years of age has been banned since 1980. The ban covers all advertising – including food advertising – and applies to both electronic and print media. The legislation specifies criteria to be used in determining whether an advertisement is directed at persons under 13 years, including the nature and intended purpose of the goods advertised, the manner of presentation, and the time and place the advertisement is shown. According to one study, the ban resulted in a reduction of US$ 88 million spent on fast food during 2010, and a reduction of 13.4–18.4 billion fast food calories consumed by French-speaking households.

For broadcast media, scholars have pointed out that if the purpose of regulation is to reduce children’s overall exposure to unhealthy food advertising, this is more likely to be achieved by using the time of day as the basis for defining the obligations of advertisers. Since large numbers of children watch television programs that are primarily intended for older audiences, restrictions that apply to children’s programming alone may have limited impact.

Food companies use a wide variety of sophisticated advertising and promotional techniques to manipulate children’s food preferences and to attract them to unhealthy foods, including through television, websites, and mobile electronic communications, product placement, sponsorship, point-of-purchase displays, competitions and prizes, and by including toys and other incentive items in restaurant meals. In some countries, unhealthy food is systematically promoted and sold in schools.

In the Republic of Korea, the Special Act on Safety Control of Children’s Dietary Life, introduced in 2009, prohibits the advertising of free, non-food items such as toys, in the course of an advertisement for “children’s preferred foods” (as defined in the enforcement decree). These preferred foods cover a range of processed and prepared foods including confectionary, bakery foods, chocolates, ice-cream, noodles, hamburgers, pizza and deep-fried foods. The Special Act, as amended, also empowers the Minister for Food and Drug Safety to limit the advertising time or to prohibit the advertising of high-calorie, nutrient-poor foods.

In Chile, a Presidential decree issued in 2015 (which implements a national law passed in 2012) prohibits food advertising directed at children aged less than 14 years where the food exceeds specified limits for energy, sodium, sugar or saturated fat. The decree defines advertising directed at children with reference to the use of characters and figures, cartoons, toys, games, music and animals attracting the interest of children, as well as children’s language and expressions and the depiction of children’s daily life. The ban applies to broadcast programmes and websites where more than 20% of the audience is under 14 years of age, and extends to advertising before, during or after the broadcast of programmes or web content. It also extends to interactive games. In addition to the ban on advertising of foods that fail to meet the nutritional limits, the decree prohibits the use of accompanying promotional strategies directed at children under 14 years, including free offers, toys and stickers. These advertising controls also apply within pre-schools, primary and secondary schools.

WHO has produced recommendations on the marketing of food and non-alcoholic beverages to children, and a framework to assist countries to implement these recommendations. The recommendations state that settings where children gather should be free from “all forms of...
marketing of foods high in saturated fats, trans-fatty acids, free sugars, or salt”. These settings include schools, pre-schools, playgrounds, family and child clinics and paediatric services, and during sporting and cultural events. Since both in-flowing and out-flowing cross-border marketing can undermine national controls on food marketing to children, WHO has recommended that Member States reach agreement on minimum standards for marketing having cross-border effects, in order to “achieve the highest possible impact of any national policy”.68

16.4 Nutrition labelling laws

Food labelling laws can support healthier food choices by informing consumers of the ingredients of food products, by presenting basic nutritional information about the food in a readable format, and by ensuring the accuracy of nutrient claims about the food.69 Labelling requirements should be uniform and sufficiently detailed to prevent confusion among consumers.70 For example, the European Union’s food labelling law, revised in 2011, requires a mandatory nutrition declaration on most packaged foods that are sold commercially, with certain exemptions.71 The regulation sets out the nutrition information that must appear in the nutrition panel, including the energy value of the food, and the amounts of fat, saturated fat, carbohydrate, sugars, protein and salt it contains.72 Very similar requirements are imposed by the Food Standards Code, which applies within Australia and New Zealand (Box 16.2).73

It is preferable for regulations to require manufacturers to list the nutrients in a standardized unit or quantity of the food (for example, grams of fat per 100g), rather than allow the manufacturer to list the amounts of nutrients in a serving size of their own choice. Standardized quantities enable consumers to make comparisons between foods based on nutrient amounts, and to choose products containing lower levels of over-consumed nutrients. The European Union law confirms that the mandatory nutrition declaration should refer to 100g or 100ml amounts, while allowing additional, portion-based declarations as appropriate.74

Box 16.2: Labelling requirements for packaged food: the Australia New Zealand Food Standards Code75

Standard 1.2.8 – Nutrition Information Requirements

Section 1.2.8-6 What must be on a nutrition information panel

(1) A nutrition information panel must include the following information:

(a) the number of servings in the package, expressed as either
   (i) the number of servings of the food; or
   (ii) if the weight of the volume of the food as packaged is variable – the number of servings of the food per kilogram, or other unit as appropriate;

(b) the average quantity of the food in a serving expressed in:
   (i) for a solid or semi-solid food – grams; or
(c) the unit quantity of the food

(d) for a serving of the food and a unit quantity of the food:

(i) the average energy content expressed in kilojoules or both in kilojoules and in calories or kilocalories; and

(ii) the average quantity of:

(A) protein, carbohydrate, sugars, fat, and

(B) subject to subsection (4), saturated fatty acids, expressed in grams; and

(iii) the average quantity of sodium, expressed in milligrams or both milligrams and millimoles; and

(iv) the name and the average quantity of any other nutrient or biologically active substance in respect of which a nutrition claim is made, expressed in grams, milligrams, micrograms and other units as appropriate...

(2) A nutrition information panel must be set out in the format in section S12-2, unless this Code provides otherwise.

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**Front-of-pack nutrition labelling**

Nutrition labels on the front of a food package are a highly visible way of informing consumers of the nutritional characteristics of food products, and assisting them to make healthy choices rapidly. For example, European Union law recognizes the potential benefits of repeating the most important elements of the nutrition declaration “in the principal field of vision” (the front of the pack). The “traffic light” food labelling system, originally developed by the Food Standards Agency in the United Kingdom, uses colour-coded labels to indicate whether foods have low, medium or high levels of sodium, saturated fat and added sugars. Food labelling systems like the “traffic light” system are known as “interpretive” systems, since they interpret the nutritional characteristics of the food. This allows consumers to compare different foods and to make healthier choices, while also creating incentives for food and snack manufacturers to reduce unnecessary levels of salt, saturated fat and added sugars in their products. In 2011, the Republic of Korea became the first Asian country to introduce voluntary traffic light labelling for “children’s preferred foods.”

Apart from traffic lights, other interpretive front-of-pack nutrition labelling systems that may assist consumers to choose healthier foods include “star rating” systems that award stars to food, based on an overall assessment of its nutritional content. In the United States, the Institute of Medicine has advocated a system that awards zero to three nutritional points to food, based on the level of saturated and trans-fat, sodium and added sugars. However, nutritional points are only awarded where the food does not exceed a threshold limit for these nutrients.
(b) Nutrition warning labels

In Finland, salt labelling legislation was introduced in 1993 to support national efforts to reduce population salt intake. High salt and low salt limits were set for a basic range of foods that are major sources of dietary salt in Finland. Relevant foods that exceed the upper limit, based on the percentage of salt in the fresh weight of the product, must carry a “high salt content” label. Manufacturers are also permitted to label foods as “reduced salt” if the salt percentage falls below the low salt limit. For example, breads with salt levels exceeding 1.3% must be labelled as high salt, but may be labelled as low salt if they do not exceed 0.7%. The “high salt” labelling requirement encouraged manufacturers to reformulate their products; as a result, a variety of high salt products disappeared from the market.

In some countries, lawmakers have debated the introduction of mandatory health warnings on sugary drinks, and other products that are nutritionally poor or which contribute nothing to a healthy diet. In Chile, a Presidential decree requires packaged food products that exceed limits set per 100 g/100 ml for energy, sodium, sugar or saturated fat, respectively, to be prominently labelled as “high in” each of the relevant nutrients. The decree contains detailed requirements for the size and placement of these warnings. The cut-off points that trigger the warnings are to be implemented incrementally with annual reductions over a three-year period.

(c) Preventing misleading and deceptive health claims

In order to prevent misleading and deceptive health claims, national governments may consider introducing laws that only permit manufacturers and advertisers to make health claims about foods that satisfy minimum criteria for good nutrition. This would prevent food manufacturers from advertising that a product that was high in added sugars, saturated fats or salt was healthy merely because it contained added vitamins. Indonesia has introduced legislation that permits nutrition claims, health claims and glycaemic index claims to be made about processed foods, but restricts these claims to foods that do not exceed limits for total fat, saturated fat, cholesterol and sodium.

The International Code of Marketing of Breast-milk Substitutes also contains provisions designed to prevent misleading and deceptive practices by manufacturers and distributors of infant formula and breast-milk substitutes. The Code states that infant formula should contain a clear statement of the superiority of breastfeeding, and a statement that the product should only be used following advice from a health worker. The container and labels should not contain pictures of infants, or include pictures or text that “may idealize the use of infant formula”.

(d) Menu labelling

In countries where chain restaurants are common, and where an increasing proportion of meals are eaten outside the home, nutrition labelling laws can be extended beyond pre-packaged foods to the standard menu items sold in chain restaurants. In the United States, federal law requires calorie counts to be shown beside standard food items that appear on the menu for at least 60 days per year in retail food chains with 20 or more locations. Consumers routinely underestimate the number of calories in food items, particularly as portion sizes increase. Restaurant labelling laws...
requiring disclosure of calories, and potentially other nutrients, including saturated fat, trans-fat and salt, could serve dual purposes, assisting consumers to make healthier choices, while increasing the incentives for food manufacturers to improve the nutritional quality of products on the menu. 91

Other options for identifying healthier foods include Singapore’s “Healthier Choice” logo, administered by the Health Promotion Board, which enables manufacturers to obtain a renewable two-year licence to use the logo on their products if they meet nutritional guidelines set for over 60 food categories. 92 Singapore’s approach has enabled the Board to update the nutritional criteria over time, and to permit different health claims to be made in conjunction with the logo, such as “lower in sodium”, and “lower in saturated fat”. 93 The Board has adapted the healthier choice symbol to healthier snacks, healthier ingredients and healthier hawker food. Under the Board’s healthier dining programme, grants are also available to restaurants to expand their healthier menu options. 94

16.5 The school environment

Governments and school authorities can use a variety of legal tools to ensure that healthier foods are sold or made available on school premises. For example, governments that subsidize school meals can impose conditions on their provision of financial support, requiring schools and educational authorities to ensure that school food complies with criteria on safety and good nutrition. The use of conditional grants is a powerful strategy in countries where there is fiscal inequality between national and regional governments, and where regional governments are responsible for the provision of services but rely on grants from national governments to supplement their budgets. School authorities – including government, private sector and not-for-profit entities – can also use their contracting powers to ensure that food businesses that are permitted to sell foods and beverages on school premises, or to supply snacks and meals to schools, meet nutritional standards. Governments can also mandate that education on nutrition is included in the school curriculum in order to lay a foundation for health literacy in later life.

In many countries, school lunch programmes provide an important opportunity for children to receive sufficient nutrients, particularly children from poor and disadvantaged backgrounds. For example, in the United States, the Department of Agriculture oversees a national school meal programme that provides low-cost or free breakfasts, lunches and afterschool snacks to children from low-income families. 95 Federal food assistance programmes for schools, and for low-income families, are periodically re-authorized by Congress. 96 Under the Healthy, Hunger-free Kids Act of 2010, schools that provide meals that comply with updated nutritional guidelines became eligible to receive additional reimbursement. 97 The Act also required that all other food sold on the school campus, outside the school meal programmes, must comply with national dietary guidelines. 98 Legislatures in some states have also imposed minimum nutritional criteria for all food sold in schools. For example, in 2005, the State of Kentucky restricted the sale of fast foods in school cafeterias to once per week, and introduced minimum nutritional standards for all foods and beverages available on public school campuses during the school day (Box 16.3). In the same year, France banned all vending machines selling snacks and drinks in schools. 99
Box 16.3: Laws regulating the sale of snacks and drinks in schools: examples from the State of Kentucky, United States

**Conduct of Schools – Special Programs**

Section 158.850 Limitation on sale of retail fast foods in school cafeteria.

[E]ach school shall limit access to no more than one (1) day each week to retail fast foods in the cafeteria, whether sold by contract, commercial vendor, or otherwise.

**Administrative Regulations**

Minimum nutritional standards for foods and beverages available on public school campuses during the school day; required nutrition...

Section 1. Beverages... a beverage offered for sale through a vending machine, school store, canteen, or fundraiser on school property shall:

(1) Be a:

(a) Fluid unflavored or flavored milk that is no more than one (1) per cent milk fat;
(b) Plain or flavored, non-caloric, noncarbonated water;
(c) 100% fruit or vegetable juice or any combination of both totaling 100%; or
(d) Any other beverage that contains no more than ten (10) grams of sugar per serving, except this limit shall not apply to 100% fruit or vegetable juice or any combination of both equaling 100%; and

(2) (a) ... not exceed a volume size of seventeen (17) ounces, except for plain or flavored, non-caloric, noncarbonated water

Section 2. Food ... a food item offered for sale through a vending machine, school store, canteen, or fundraiser on school property shall meet the requirements established in this section.

(1) Calories from fat shall not exceed thirty (30) per cent, excluding reduced fat (two (2) per cent milk-fat or less), cheese, nuts, seeds, and nut butters.

(2) Calories from saturated fat shall not exceed ten (10) per cent.

(3) Calories from sugar shall not exceed thirty-two (32) per cent by weight....

(b) The grams of sugar shall not exceed fourteen (14) grams.

(c) The limit established in this section shall not apply to fresh, frozen, canned, or dried fruits and vegetables.

(4) (a) Chips, cereals, crackers, baked goods, and other snack items shall not contain more than 300 milligrams of sodium per serving.

(b) Pastas, meats, and soups shall not contain more than 450 milligrams of sodium per serving.

(c) Pizza, sandwiches, and main dishes shall not contain more than 600 milligrams of sodium per serving.

(5) The portion or pack size for chips, crackers, popcorn, cereal, trail mix, nuts, seeds, or jerky shall not exceed two (2) ounces.
(6) The portion or pack size for cookies shall not exceed one (1) ounce.
(7) The portion or pack size for cereal bars, granola bars, pastries, muffins, doughnuts, bagels, or other bakery-type items shall not exceed two (2) ounces.
(8) The portion or pack size for non-frozen yogurt shall not exceed eight (8) ounces.
(9) The portion or pack size for frozen dessert items... shall not exceed four (4) ounces.

In Costa Rica, the Ministries of Health and Education proposed regulations, issued in 2012, which restrict the use of added sugars, oil, butter, margarine, cream, mayonnaise and cream cheese in food prepared in school cafeterias. Deep-frying of foods, and foods containing trans-fatty acids, are prohibited. The same decree also prohibits the sale or distribution of pre-packaged foods and drinks that exceed limits for fat, saturated fat, sodium, sugar and energy. The sale of energy drinks, and carbonated drinks (including “light” and “diet” drinks) is not permitted. All foods sold must have labels that indicate their nutritional content. These regulations, which are mandatory for all public schools, and recommended for private schools, were implemented incrementally over a period of three years, in order to permit manufacturers to reformulate their products.

School authorities should carefully consider the potential risks of accepting payments from food and beverage manufacturers in return for the exclusive right to market brand-name foods within schools. Pre-packaged food may be high in sugar, salt and saturated fat, and advertising in schools affects student choices not only in the cafeteria but also outside school hours, often resulting in increased consumption of sugar and fats. As noted previously, WHO has recommended that schools, pre-schools, playgrounds and other settings where children gather should be free from “all forms of marketing of foods high in saturated fats, trans-fatty acids, free sugars, or salt”.

In the Republic of Korea, the Special Act on Safety Control of Children’s Dietary Life introduced a number of innovative controls to improve children’s nutrition and to prevent obesity. For example, the Act authorized the head of each self-governing city or local government to designate areas within 200 metres of schools as “green food zones”. Local governments are authorized to appoint managers to assist local food stores within the green zone to improve the nutritional quality of the foods they make available for sale to children. Local food businesses that comply with minimum nutrition standards that apply to a range of children’s preferred foods may apply for designation as exemplary stores. Children’s preferred foods that do not comply with these criteria may not be sold in schools or in the designated stores. The creation of green food zones around schools is one example of how the regulation of the built environment may support improvements in nutrition (see Section 16.7, below). The Special Act also authorized the head of self-governing local districts to establish centres to support the safety and nutritional quality of meals provided by children’s meal services to nurseries, kindergartens and schools.
16.6 Mandatory food standards, and restrictions on sale

In some countries, governments have used sales bans and other legal restrictions to support national nutritional objectives. For example, between 1987 and 1992, Mauritius imposed restrictions on the amount of palm oil in the cooking oil (“ration oil”) commonly used in that country, replacing it with soya bean oil. This substitution led to a reduction in the saturated fat content of ration oil, resulting in an average 15% reduction in cholesterol among adults over this five-year period. Similarly, Ghana has implemented a food standard which prevents the import or sale of fatty cuts of meat that exceed the prescribed percentage of fat: poultry (15%), beef (25%), mutton (30%), and pork (25%).

This section considers mandatory food standards in three areas. Firstly, sales bans and mandatory standards that apply to food manufacturers and retailers may be an appropriate strategy where there is a clear case for eliminating a harmful substance from the food supply. Conversely, governments may use mandatory fortification laws to require nutrients to be added to food, in an attempt to reduce micronutrient deficiencies in the population. Thirdly, governments may introduce regulatory measures to reduce consumption of over-consumed nutrients in the population, in circumstances where the regulatory goal is moderation, rather than elimination. For example, governments may consider mandatory standards where voluntary or co-regulatory processes for food reformulation have proved ineffective in meeting national nutritional goals; for example, in reducing average consumption of salt.

(a) Eliminating harmful substances from the food supply: trans-fats

In some cases, substances contained in or added to food may cause such harm that governments may seek to eliminate them from the food supply, as distinct from warning consumers of their presence through mandatory labelling requirements. WHO has identified the elimination and replacement of trans-fats with unsaturated fats as a cost-effective priority for reducing cardiovascular diseases, diabetes, and other conditions associated with trans-fat intake. Bans on the use of industrially produced, partially hydrogenated vegetable oils in food are the most effective way to achieve this, since they are likely to lead to product reformulation. Such bans should be applied to trans-fats in all foods, rather than simply restaurant foods, as occurs in some jurisdictions.

In 2015, the United States Food and Drug Administration (FDA) issued a final determination that partially hydrogenated oils, the principal source of trans-fat, are not “generally recognized as safe” (GRAS) under the Federal Food, Drug, and Cosmetics Act. The classification of a food ingredient as GRAS under the Act excludes it from the definition of a “food additive” and enables a food manufacturer to avoid the pre-market approval processes that would otherwise require them to petition the FDA and to demonstrate with reasonable certainty that the additive is not harmful under the conditions of intended use. Federal regulations authorize the FDA to contest the pre-existing GRAS status of a food ingredient through a public process that involves making a preliminary determination, making the supporting evidence publicly available and considering public comments. Thereafter, if the Commissioner concludes that there is a lack of convincing evidence...
that the ingredient is GRAS, the Commissioner may ban the use of the additive, or alternatively issue regulations setting out the levels for the safe use of the additive in food. The process of reviewing the GRAS status of a substance in food therefore provides a mechanism for removing it from the food supply, as the FDA is unlikely to grant approval for its use as a food additive.

In Canada, the province of British Columbia used its statutory power to regulate “health impediments” in order to issue regulations that require restaurants to ensure that the trans-fat content of partially hydrogenated oil or margarine used in restaurant food is less than 2%, and in any other case, is less than 5% of the total fat content of the food (Box 16.4).

Box 16.4: Regulating trans-fat in British Columbia

Public Health Impediments Regulation 2009

Section 3 (1) In this section:

"food" means food

(a) located on the premises of, or prepared, served or offered for sale in, a food service establishment, other than food that is
   (i) required under the Food and Drugs Act (Canada) to be labelled with a nutrition facts table, or
   (ii) not intended for public consumption, or
(b) used on the premises of a food service establishment as an ingredient in the preparation of a food or beverage served or offered for sale in the food service establishment;

(2) Food is deemed to contain trans fat if:

(a) under the heading "Fat" on the nutrition facts table with which the food is labelled, it is indicated that the food contains more than 0 grams of trans fat, or
(b) an ingredient of the food is partially hydrogenated
   (i) vegetable shortening,
   (ii) margarine, or
   (iii) vegetable oil.

(3) Subject to subsection (4), an operator of a food service establishment must ensure that the trans-fat content of food is,

(a) in the case of a partially hydrogenated vegetable oil or soft, spreadable partially hydrogenated margarine, 2% or less of the total fat content of the oil or margarine, and
(b) in any other case, 5% or less of the total fat content of the food.

(4) The limit set out in subsection (3) (b) does not apply in respect of a food in which the trans-fat comes from dairy products or ruminant meat only.
Mandatory food fortification

Governments may also adopt regulations or mandatory standards in order to implement food fortification programmes to improve micronutrient deficiencies. Examples include laws or standards requiring the universal iodization of salt, and the fortification of flour with iron, folic acid, and/or zinc. For example, Nigeria dramatically reduced iodine deficiency disorders through an effective, multisectoral approach. In Nigeria, most salt for domestic consumption is imported through four major ports, creating a favourable environment for regulation. In 1992, the Standards Organization of Nigeria (SON) mandated that all food-grade salt must be iodized with potassium iodate. In 2002, a multisectoral taskforce was formed to improve and sustain universal salt iodization in Nigeria. It included salt producers, the federal Ministries of Health and Education, SON (which carries out inspections at ports, and at salt companies), and the National Agency for Food and Drug Administration and Control (NAFDAC), which is responsible for enforcement of SON standards at retail level. Household surveillance also occurs through primary schools, with children bringing salt samples to school for testing. In 2004, NAFDAC was reported to have destroyed more than 10 000 20 kg bags of non-iodized salt since it joined the taskforce. Through product registration, education, and comprehensive inspection and surveillance at factory, distributor, retailer and household level, the taskforce has achieved impressive levels of compliance with universal salt iodization standards, providing a benchmark for salt iodization programmes elsewhere.

Regulatory measures to reduce over-consumed nutrients

Regulatory efforts to moderate the consumption of over-consumed nutrients, including salt, sugar and saturated fat, can take many different forms. These include food laws that require the elimination or reduction of particular nutrients as a precondition to using specific descriptors in relation to that food. For example, European Union law defines “fruit juice”, as well as the ingredients and substances that may be added to it, and provides that fruit juices may not contain added sugar. Alternatively, governments may adopt voluntary or statutory targets for reductions in salt, saturated fat and/or sugar levels in food and require food manufacturers to meet them over a defined period of time (usually several years).

Salt reduction measures

In 2010, global average salt consumption was estimated to be around 9.9 g/day (3.95 g/day sodium), nearly twice the WHO recommended limit of 5 g/day. Excess salt consumption has been estimated to cause over 3.1 million deaths each year. For this reason, reducing average salt intake has been identified by WHO as a cost-effective priority for reducing diet-related disease. A number of countries have implemented legislation, including mandatory, maximum salt levels either for particular products (e.g. bread), or for a wider range of food categories that contribute large amounts of salt to the diet. In 2013, South Africa introduced regulations that impose maximum salt levels for 13 food categories, including bread, breakfast cereals and porridges, butter and fat spreads, processed meat, dry soup and stock powders, ready-to-eat savoury snacks and potato crisps.
Argentina’s salt reduction law sets maximum sodium limits for a wide range of meat products, flour and bakery products (including crackers and cookies), and soups, dressings and canned foods. The law authorizes the Ministry of Health to set maximum salt values for additional food categories. In addition, it authorizes the Ministry to require restaurant menus and products containing sodium to include warning messages about the risks of excess sodium consumption, to require restaurants to offer menu options without added salt, and to set new norms and defaults for low-sodium salt and for the availability of salt shakers and salt packets in restaurants. In 2013, Uruguay banned salt shakers in public and private high schools throughout the country, while the capital city, Montevideo, passed a municipal law that requires bars and restaurants to withdraw condiments that exceed sodium limits, and to make salt shakers available only upon request.

Mandatory salt reduction standards may be a useful option for governments to consider, particularly in countries where many people with hypertension are never diagnosed nor treated, where stroke victims are often left disabled and impoverished, and where nutritional literacy is low. Governments may also consider mandatory standards in countries where industry-led salt reduction programmes have failed to reach agreement on an adequately ambitious set of salt reduction targets, or where a significant number of major food companies fail to reformulate their products in order to achieve them (see Section 2.3). For example, governments may specify national goals for reductions in salt intake and require industry to revise targets for a sufficiently broad range of food categories to enable the goal to be achieved within a defined time frame. Governments may also make participation in food reformulation programmes mandatory for larger food companies, require companies to submit annual reports of their progress, and require independent audits of progress.

16.7 Regulating the built environment

Regulation of the physical and built environment provides opportunities to improve nutrition and reduce overweight and obesity, by: improving access to healthier foods, facilitating greater daily physical activity, and removing other disincentives to a healthy lifestyle. Zoning and development regulations control the kinds of land use that are permissible in a local area, including local design features, the infrastructure that must accompany new residential and commercial developments, as well as transport options and the kinds of activities that are available. These laws are not directed at individuals, but can influence patterns of behaviour within the population over a longer timescale, both by changing the conditions for approval to carry out new developments, and by gradually altering the character of existing neighbourhoods.

The development processes that govern approvals for new developments and urban renewal projects provide opportunities to introduce new land-use patterns, and to significantly reduce or reverse those features of a neighbourhood that work against an active lifestyle and a healthy diet. For example, this can occur through the requirement for public or private developers to improve public infrastructure: creating new street layouts, widening and improving sidewalks, creating dedicated bike lanes, parkland, children’s playground areas and community space to promote social interaction and opportunities for physical activity. Although improvements in neighbourhood infrastructure can create an “enabling environment” for more physically active lifestyles, their impact will not be automatic. In addition, local governments and other responsible authorities will
need to meet community expectations about the safety and amenity of the local environment. Issues to consider include measures to calm traffic and to protect pedestrians from exhaust fumes and risks of motor vehicle injuries, adequate lighting and visibility to reduce security concerns, removal of rubbish and other hazards (e.g. discarded needles), protection from toxic exposures, control of pets, feral animals and animal droppings, and the maintenance of a clean and attractive environment.\textsuperscript{145}

Zoning regulations can also alter the character of existing neighbourhoods in ways that support healthier lifestyles.\textsuperscript{146} In many cities, local government zoning controls have segregated businesses from residential areas, schools and restaurants, encouraging automobile use while neglecting public transport options.\textsuperscript{147} Zoning laws that encourage higher density, mixed use development along transport corridors have the capacity, over time, to bring private residences, centres of employment, small businesses, shops and places of recreation into closer proximity. Active transport options (e.g. walkways, cycle lanes), together with efficient and well-run public transport systems, can encourage incidental physical activity while reducing greenhouse gas emissions.

Zoning and development regulations, and economic policies, can also alter the character of the local food environment.\textsuperscript{148} Evidence suggests that the distribution and concentration of fast food restaurants selling foods of low nutritional value, and the absence of supermarkets selling fresh fruits and vegetables, can affect the quality of diets among residents in the local area, creating risks for weight gain and metabolic disease.\textsuperscript{149} New York City created zoning and tax incentives to encourage grocery stores to carry an appropriate selection of fresh produce (see Box 16.5). Economic incentives for large supermarket and grocery chains to open stores in underserved and disadvantaged neighbourhoods may also increase access to fresh and healthy food, since the scale and supply chain management of these stores may enable them to carry healthy foods at lower prices than smaller stores.\textsuperscript{150} New York City also created a new class of permit for “green carts” that were specifically authorized to sell (only) fresh fruit and vegetables on city streets. It provided micro-loans and technical assistance to assist new operators to become established.\textsuperscript{151}

\textbf{Box 16.5: Creating incentives for local grocery stores to carry fresh produce, dairy products and meats}

In New York City, the Food Retail Expansion to Support Health project (FRESH) provides zoning and tax incentives to retailers who qualify as FRESH food stores (i.e. those devoting certain amounts of floor space to the sale of fresh produce, dairy, canned and frozen foods, and fresh and prepared meats, fish and poultry).\textsuperscript{152} Qualifying stores are eligible for additional floor space in mixed residential and commercial buildings, a reduction in required parking for patrons, increased access to real estate in districts designated for light manufacturing, real estate tax reductions, sales tax exemptions and mortgage recording tax deferrals.\textsuperscript{153}

Amendments to zoning laws and retail permit laws can also remove barriers to farmers’ markets selling fresh produce in appropriate locations, such as near schools, close to public transport and in underserved areas.\textsuperscript{154} The City of Detroit in the United States requires a minimum distance of 500 feet (approximately 150 metres) separating schools and specified kinds of fast food and take-away restaurants.\textsuperscript{155} As noted in Section 16.5, legislation in the Republic of Korea has created “green food
zones” around schools, and provides certification for “exemplary” businesses selling children’s preferred foods within the zone that meet minimum nutritional criteria. Scholars and public health institutions have pointed to the clustering of fast food restaurants around schools and advocated using zoning controls to reduce their density, or to prevent their location close to schools.

16.8 Addressing hunger and food insecurity

Despite rising rates of overweight and obesity, undernutrition remains a problem in many parts of the world. The Food and Agriculture Organization of the United Nations has estimated that, in 2014–2016, 795 million people (one in nine of the global population) were undernourished. The vast majority of these people – 780 million – lived in developing regions. Despite significant reductions in mortality among children under five years, malnutrition remains a significant hurdle to efforts to improve the health of women and children, particularly in sub-Saharan Africa and south Asia. In 2010, child and maternal undernutrition, including suboptimal breastfeeding, childhood underweight and child micronutrient deficiencies, were responsible for over 1.4 million deaths, and around 7% of the global burden of disease. In 2012, WHO Member States made the commitment to achieve a range of global targets for maternal, infant and young child nutrition, to be met by 2025. These include a 30% reduction in low birth weight, a 40% reduction in the global number of children who are stunted, and a goal of reducing childhood wasting to less than 5%.

An important element in the success of Brazil’s efforts to reduce hunger and improve infant nutrition was the legal recognition, in the Organic Law of Food Security and Nutrition, that Brazilian citizens have a right to adequate food and nutritional security (Box 16.6). The legislative commitment of the Government of Brazil to fulfil this right, in collaboration with civil society, provided the basis for a diverse set of policies addressing access to food, supporting income-generating activities (including smallholder agriculture), and improving primary health care. As a result of these policies, Brazil has achieved impressive reductions in underweight, wasting and stunting (see further, section 6.3(c)).

Box 16.6: Legal recognition of the right to adequate food and nutritional security in Brazil

<table>
<thead>
<tr>
<th>Organic Law of Food Security and Nutrition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Article 1</strong> This Law establishes the definitions, principles, guidelines, objectives and composition of the National System for Food Security and Nutrition (SISAN), through which the government, with the participation of civil society, will formulate and implement policies, plans, programmes and actions aimed at ensuring the human right to adequate food.</td>
</tr>
<tr>
<td><strong>Article 2</strong> Recognizing that adequate food is a fundamental right of human beings, inherent to human dignity and essential to the realization of the rights enshrined in the Constitution, the government should adopt policies and actions as necessary to promote and ensure the food safety and nutrition of the population.</td>
</tr>
<tr>
<td><strong>Article 7</strong> Achieving the human right to adequate food and ensuring the food and nutritional security of the population will be accomplished through SISAN, comprised of a set of entities including federal, state, federal district and municipal institutions, private or non-profit, which are interested in food security and nutrition and which show an interest in joining the system, with respect to the applicable legislation.</td>
</tr>
</tbody>
</table>
In some countries, the right to food is justiciable, whether through constitutional recognition of the right to food or related human rights, or through framework legislation for food security. In the course of public interest litigation which began in 2001, the Supreme Court of India recognized that the right to life enshrined in Article 21 of the National Constitution includes a right to “live with human dignity”, which encompasses the right to food. Further support for this right appears in two Directive Principles of State Policy, which recognize the right to an adequate standard of living (Article 39(a)), as well as the primary obligation of the State to “raise the level of nutrition and the standard of living of its people” (Article 47). In a series of orders based on Article 21, the Supreme Court has ordered national and state governments to implement various programmes to ensure food access, including midday meal programmes in primary schools, converting the benefits offered under these schemes to legal entitlements, and expanding coverage. In 2003, the Supreme Court ruled that six priority groups were entitled to food assistance, including aged, infirm, disabled and destitute men and women, pregnant and lactating women and widows, single women and persons aged over 60 years with no means of support. In 2002, the Supreme Court appointed two Commissioners to act on the Court’s behalf, monitoring compliance with court orders, investigating violations and seeking further court interventions if required.

Government programmes to improve food security for women and children are an important strategy for fulfilling the right to adequate food and nutrition. The entitlements and conditions for participation in these programmes must be carefully defined. As illustrated by Box 16.7, the impact of food aid programmes on nutrition at the household level may vary by gender and should be carefully monitored. Cash transfer programmes, such as Brazil’s Bolsa Família (Family Grant), are an alternative to direct food aid, and have been shown to be successful in reducing undernutrition and improving maternal and child health. By giving each female head of household a monthly cash stipend based upon the number of children in the household, the programme has increased food security and provided a flexible safety net that can be spent on a variety of needs, including food, clothing, safe accommodation and health care.

Box 16.7: Food programmes for maternal and child health: food distribution and food-for-work in Ethiopia

The Government of Ethiopia implemented a comprehensive food aid programme, basing assistance on food-for-work (for able-bodied persons), or free distribution for those unable to work. Analysis of this programme revealed different impacts based on gender. Food-for-work assistance resulted in an improvement in the nutritional status of boys, relative to girls, while food assistance delivered for free (no work required) improved the nutrition of girls. Ethiopia’s experience of linking food distribution to work demonstrates the importance of monitoring the outcomes of nutrition assistance programmes to ensure both efficacy and equity. Food-for-work programmes should also be carefully scrutinized, not only in terms of the distribution method (free assistance or food-for-work), but also who is targeted for each kind of programme. For example, the hard physical labour required for food-for-work programmes may cause deterioration in the nutritional status of workers, while also reducing the time available for household administration, and for other income-generating activities.
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