

# **NUTRIENT PROFILE MODEL**

## **FOR THE WHO AFRICAN REGION**

**A TOOL FOR IMPLEMENTING WHO RECOMMENDATIONS ON THE MARKETING OF  
FOODS AND NON-ALCOHOLIC BEVERAGES TO CHILDREN**



REGIONAL OFFICE FOR

**World Health  
Organization**  
**Africa**

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**WORLD HEALTH ORGANIZATION  
REGIONAL OFFICE FOR AFRICA  
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## Nutrient Profile Model for the WHO African Region: a tool for implementing WHO recommendations on the marketing of foods and non-alcoholic beverages to children

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## ABBREVIATIONS

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**AFR** WHO African Region

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**CI** confidence interval

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**FBDGs** food-based dietary guidelines

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**FAO** Food and Agriculture Organization of the United Nations

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**GNPR** Second Global Nutrition Policy Review

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**ICN2** Second International Conference on Nutrition

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**NCD** Noncommunicable disease

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**SEAR** WHO South East Asia Region

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**SSBs** Sugar-sweetened beverages

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**UNU** United Nations University

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**WHA** World Health Assembly

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**WHO** World Health Organization

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**WPR** WHO Western Pacific Region

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## 1. INTRODUCTION

According to the Global Burden of Disease Study group, poor-quality diets are now the leading cause of disease worldwide (1; 2). A key driver of obesity and diet-related noncommunicable diseases (NCDs) is the consumption of foods high in sugars, salt and fat, including saturated fats and trans-fats (3). The growing availability and consumption of low-cost, processed foods that are characteristically energy-dense (4) is fuelling the rise in obesity and NCDs (5).

Like everywhere else, diets in the African Region are increasingly characterized by the consumption of processed foods that are high in sugars, salt and fat, and this is contributing to the growing burden of overweight and obesity, and diet-related NCDs. According to a recent study that included populations from Tanzania, Uganda, and South Africa, women were classified in tertiles according to their consumption of processed foods. Those in the highest tertile were three times more likely to be overweight (95% CI 1.66, 5.45) and 4.24 times more likely to be obese (95% CI 2.23, 8.05) than women in the lowest tertile (6).

Calls for action to promote healthy diets and limit excessive intake of energy, sodium, unhealthy fats, and free sugars have been issued through various international platforms, such as the World Health Assembly and the Second International Conference on Nutrition (ICN2). The World Health Organization (WHO) has been working to support countries to implement evidence-based interventions to reduce the double burden of malnutrition. One key aspect of WHO's technical support in this regard is the development/adaptation of tools and policy instruments to help improve food environments and promote healthy diets. A good example is the development of food-based dietary guidelines (FBDGs) to promote the consumption of a greater variety of fresh or minimally processed foods.

Various global strategies advocate population-based approaches to control the current obesogenic food environment and promote healthy diets. Relevant policy guidance is available in the 2014 ICN2 Rome Declaration and Framework for Action (2014) (7; 8), the Comprehensive Implementation Plan on Maternal, Infant and Young Child Nutrition (2014) (9), the Global NCD Action Plan (2013-2020) (10), the WHO Global Strategy on Diet, Physical Activity and Health (2004) (11), and the Report by the Commission on Ending Childhood Obesity (2016) (12).

Unhealthy diet is a risk factor for noncommunicable diseases. The risk can be mitigated throughout life by maintaining healthy weights from childhood and consuming foods that are low in saturated fat, trans-fatty acids, free sugars and salt. Evidence on the extent, nature and effects of food marketing to children shows that advertising is extensive and other forms of food marketing to children are widespread. Most marketed foods are high in fat, free sugars or salt. The evidence also shows that television and other types of media, especially digital advertising, influence children's food preferences, purchase requests and consumption patterns and that children are increasingly exposed to a wide range of other marketing techniques. A set of recommendations on the marketing of foods and non-alcoholic beverages to children was endorsed by the Sixty-third World Health Assembly in May 2010 and Member States were urged to take the necessary measures to reduce the impact of marketing of unhealthy foods. (13).

The strategies include fiscal measures such as taxation of sugar-sweetened beverages (SSBs); implementing recommendations on the marketing of foods and non-alcoholic beverages to children (13); implementing a standardized nutrient labelling system with interpretive front-of-pack labelling, supported by education of both adults and children to improve nutrition literacy; and creating healthy food environments around schools.

In recognition of the commitments made by Member States at the ICN2, the UN General Assembly adopted a resolution inviting governments to implement the Rome Declaration on Nutrition (7) and the Framework for Action (8). The Declaration and Framework outline a set of voluntary policy options and strategies to achieve better nutrition for all. Member States recognized the need to prevent all forms of malnutrition worldwide, including overweight and obesity, and reduce the burden of diet-related NCDs. They called on the Food and Agriculture Organization of the United Nations (FAO) and WHO, in association with the other UN agencies, funds and programmes, as well as other international organizations, to support governments to develop, strengthen and implement policies, programmes and plans to address the multiple challenges of malnutrition.

Food environments have a great impact on populations' nutrition and health status; therefore, food environment interventions are a popular way of addressing the obesity epidemic (14). However, there are gaps in their implementation (15; 16).

WHO is particularly concerned that the implementation of recommendations on marketing of foods and non-alcoholic beverages to children adopted by the Sixty-third World Assembly in 2010 has been slow globally, especially in the African Region. Results from the second Global Nutrition Policy Review (GNPR2, 2017) indicated that only three countries in the Region (The Gambia, Liberia, and Mali) have implemented measures to regulate the marketing of foods and non-alcoholic beverages to children. One of the reasons for the slow progress may be linked to difficulties in identifying and classifying foods for which marketing should be restricted, because of the lack of appropriate food classification tools.

WHO has adopted nutrient profiling as a useful approach to identifying foods whose marketing should be restricted as part of the implementation of the recommendations endorsed by the World Health Assembly (WHA) to control the marketing of foods and non-alcoholic beverages to children (17; 13).

This nutrient profile model was developed by the WHO Regional Office for Africa in collaboration with Member States and the Department of Nutrition for Health and Development at WHO headquarters. It seeks to support countries in their efforts to control obesogenic food environments and promote healthy diets, the primary focus being to protect children from the marketing of unhealthy foods and non-alcoholic beverages.

## **1.1 Healthy diets**

The exact make-up of a diversified, balanced and healthy diet will vary depending on individual needs e.g., age, gender, lifestyle, degree of physical activity as well as the cultural context, locally available foods and dietary customs. A healthy diet is one that supplies the right amounts of essential nutrients from a variety of fresh and minimally processed foods.

Such a diet is typically low in energy-dense, nutrient-poor foods (18). Where undernutrition persists, the best options to meet energy needs should be from nutrient-rich foods (containing complex carbohydrates, proteins, micronutrients and fat in the correct proportions) and not from energy-dense nutrient-poor foods that meet energy needs but do not supply essential nutrients in a healthy way.

The WHO Population Nutrient Intake Goals for preventing diet-related chronic diseases provide guidance on acceptable levels of specific nutrients as percentages of daily energy requirements (Table 1). These goals are also useful as a guide for healthy diets (19).

**Table 1: Ranges of population nutrient intake goals (19)**

Dietary factor	Goal (% of total energy, unless otherwise stated)
Total fat	15–30%
Saturated fatty acids	<10%
Polyunsaturated fatty acids (PUFAs)	6–10%
n-6 Polyunsaturated fatty acids (PUFAs)	5–8%
n-3 Polyunsaturated fatty acids (PUFAs)	1–2%
Trans-fatty acids	<1%
Monounsaturated fatty acids (MUFAs)	By difference <sup>i</sup>
Total carbohydrate	55–75% <sup>ii</sup>
Free sugars <sup>iii</sup>	<10%
Protein	10–15% <sup>iv</sup>
Cholesterol	<300 mg per day
Sodium chloride (sodium) <sup>v</sup>	<5 g per day (<2 g per day)
Fruits and vegetables	≥400 g per day
Total dietary fibre	From foods <sup>vi</sup>
Non-starch polysaccharides (NSP)	From foods <sup>vi</sup>

(i) Calculated as: total fat - (saturated fatty acids + polyunsaturated fatty acids + trans-fatty acids).

(ii) The percentage of total energy available after taking into account that consumed as protein and fat, hence the wide range.

(iii) The term “free sugars” refers to all monosaccharides and disaccharides added to foods by the manufacturer, cook or consumer, plus sugars naturally present in honey, syrups and fruit juices.

(iv) The suggested range should be seen in the light of the Joint WHO/FAO/UNU Expert Consultation on Protein and Amino Acid Requirements in Human Nutrition.<sup>1</sup>

(v) Salt should be iodized appropriately. The need to adjust salt iodization, depending on observed sodium intake and surveillance of iodine status of the population, should be recognized.

(vi) See section under “Non-starch polysaccharides” ([www.who.int/mediacentre/factsheets/fs394/en/](http://www.who.int/mediacentre/factsheets/fs394/en/)).

<sup>1</sup> Joint FAO/WHO/UNU Expert Consultation on Protein and Amino Acid Requirements in Human Nutrition (2002: Geneva, Switzerland), Food and Agriculture Organization of the United Nations, World Health Organization & United Nations University. (2007). Protein and amino acid requirements in human nutrition: report of a joint FAO/WHO/UNU expert consultation. Geneva: World Health Organization. <http://www.who.int/iris/handle/10665/43411>. - Accessed 11 March 2019.

## 1.2 Nutrient profile models

Implementing WHO's recommendations to control the marketing of foods and non-alcoholic beverages requires an objective method of identifying those that are admissible versus those not recommended as constituents of a healthy diet. Nutrient profiling is a scientific method that can serve such a purpose by classifying food and beverage items according to their nutritional composition (20). It provides a method of differentiating between foods and non-alcoholic beverages (hereafter referred to collectively as "foods") based on their potential contribution to consumption of excess energy, saturated fats, trans-fats, sugars or salt.

WHO has been working with Member States to develop nutrient profile models since 2009. Five of the six WHO regional offices have already developed nutrient profile models: the European Region (2013–2015) (21), the Eastern Mediterranean Region (2014–2015) (22), the American Region (2015) (23), the Western Pacific Region (2015) (24) and the South-East Asia Region (2016–2017) (25).

Nutrient profile models vary in complexity and detail. The nutrients (or food components) profiled are selected based on the health-related outcomes associated with their consumption. Sodium, sugar, saturated fat and trans-fat have been the focus of WHO nutrient profiling because of their association with hypertension, diabetes and cardiovascular diseases. Nutrient profiling methods fall into two main types: (i) a threshold approach, which uses thresholds of specified nutrients (components targeted for restriction); and (ii) a scoring system, which consists in creating a score from a combination of thresholds for different nutrients. In the first case, each nutrient is analysed individually in relation to its threshold and the decision on restriction is based on each nutrient taken individually. If one or more of the target nutrients is above the defined threshold, marketing may be restricted. In the scoring system, points based on the content of each of the target nutrients are assigned and summed to obtain the total score. The decision on marketing will depend on the value or cut-offs of the score and may vary from one model to another. The approach using individual nutrient thresholds is easier to adapt and apply.

## 1.3 Development of the nutrient profile model for the African Region

The nutrient profile model for the African Region builds on the models developed in the other WHO Regions. It adopts the threshold approach, adapting food categories from other Regions and incorporating foods that are commonly consumed in Africa. A three-step process was followed for developing the model as summarized below.

### 1.3.1 Development of a draft model

This preliminary step consisted in reviewing existing WHO nutrient profile models to identify which was the most suitable for the African Region. The South East Asia Region (SEAR) model was selected as the most suited and was adapted to the context of the African Region.

Adaptations consisted mostly in the inclusion of food items consumed in the African Region. The SEAR nutrient thresholds were also adopted with minor adjustments and food categories adapted by inclusion or exclusion of food items as appropriate for the African Region. The resulting draft model was tested and refined in the subsequent steps.

### 1.3.2 Pilot testing of the draft model

The draft model was pilot-tested in Algeria, Cameroon, Cabo Verde, Kenya, Mauritius, Senegal, Seychelles, Uganda and Zimbabwe. The pilot-testing involved applying the draft model to a list of 100 to 200 foods that are marketed to and/or commonly consumed by children in the country. Applicability of the model was examined using the food list to evaluate whether the thresholds were aligned with existing national guidelines on food or nutrient standards.

Seven of the nine countries held stakeholder discussions on the applicability, feasibility, strengths and weaknesses of the draft model. Alignment of the guidance from the model with the country's food-based dietary guidelines was also assessed. Countries provided comments on the proposed food categories, the thresholds, exclusions and prohibitions and an assessment of whether the categorization of foods by the model was in line with national food-based dietary guidelines.

### 1.3.3 Regional consultation and finalization of the model

Following the pilot testing, a regional consultation bringing together the nine countries and selected experts was held to review and finalize the model. Results of the field testing of the draft nutrient profile model were analysed and reviewed. Countries' experiences from the pilot-testing were discussed and appropriate modifications made to come up with a consensus regional nutrient profile model. Following the consultation and feedback from Member States, several changes were made to the draft model. For example, the names of food categories were adapted to be more explicit, with slight modifications in examples to include foods consumed in the African Region. The observations and recommendations made during the consultation were used to refine the consensus model. The updated version was circulated among pilot countries for review and the comments received were used to finalize the model.

## 2. A NUTRIENT PROFILE MODEL FOR THE WHO AFRICAN REGION

It is proposed that Member States adopt this model as a tool to implement the recommendations on the marketing of foods and non-alcoholic beverages to children that were endorsed by the Sixty-third World Health Assembly (WHA63.41). The model can be adapted to reflect foods that are specific to a given country and to align the thresholds with national dietary goals and nutrition standards.

The target population group for application of this model includes children and adolescents, aged 2 to 19 years (based on the WHO definition). The range excludes the first 1 000 days which are covered by the International Code of Marketing of Breast-milk Substitutes (26) and other strategy documents. However, in applying the model, Member States can select an alternative age range (e.g. including adults) to suit their country-specific needs.

## 2.1 Aim of the model

- (a) The primary purpose of the model is to implement the WHO recommendations on marketing of foods and non-alcoholic beverages to children by identifying unhealthy foods that should be subject to marketing restriction.
- (b) This model could also be adapted (after suitable testing and validation) for other purposes, such as defining a tax policy to limit consumption of unhealthy foods or developing benchmarks for foods sold in school cafeterias and other public institutions.
- (c) The use of nutrient profiling as a means of assessing eligibility for marketing and other purposes could also become a driver for product reformulation. Processed foods that the model classifies for restricted marketing might benefit from reformulation, enabling the manufacturer to continue to advertise them.
- (d) The model can be used by national authorities to guide policy-making and regulation related to food labelling, and health or nutrition claims by food manufacturers. It can also inform national campaigns for healthy diets and criteria for food procurement and service in public institutions.

## 2.2 Presentation, principles and rationale

The model is presented in tabular format and consists of 18 categories (with 10 subcategories) of processed foods and components that are subject to restriction, namely, total and saturated fats, sugars, sodium and energy.

- (a) The 18 food categories are the same as those in the SEAR model, which were aligned with the food category systems used by Codex Alimentarius to set standards for food additives.
- (b) The nutrient profile model does not deal with special foods or supplements recommended for people with specific disease conditions.
- (c) Two categories of fresh foods, i.e. fresh and frozen vegetables and animal products, have been included in the model to encourage the consumption of fresh foods.
- (d) The model is designed for application to the nutritional quality of foods regardless of the quantities consumed. Using a 'per serving' approach introduces several difficulties, including the fact that serving sizes and consumption patterns are an individual matter and cannot be standardized, especially across different age groups. Therefore, the nutrient thresholds are calculated per 100 g or ml of product, irrespective of the amount of product consumed. An exception is made for category 18 (sauces, dips and dressings) where portion size is considered since serving sizes tend to be small, usually in the range of 10 g-20 g.
- (e) The nutrient thresholds for most food categories were adopted from the SEAR model which used the 10-11-year age group as reference, and are based on two main assumptions:
  - (i) The approximate range of daily energy requirements for boys and girls aged 10-11 years is 2000-2150 kcal. The thresholds were therefore calculated on the rounded figure of 2000 kcal daily energy. (27)
  - (ii) Approximately 25% of the energy requirement is supplied by each main meal (3 meals/day) and 10%-12% from each snack (2 snacks/day). (28) Therefore,

thresholds were calculated on the basis that each 100 g of product provides approximately 230 kcals. This energy level is also aligned with the threshold energy content of foods defined as energy-dense by various agencies. (29; 30) For some food categories, the energy, fat, sugar and sodium values for products as stated in the United States Department of Agriculture (USDA) food composition database (31) have been used for setting thresholds.

- (f) The nutrients for which thresholds have been set are: total fat, saturated fat, total sugars, added sugars, sodium and energy. The thresholds are based on the dietary goals recommended by WHO for preventing obesity and related NCDs, and sugars and salt guidelines (19; 32; 33). Unless indicated otherwise, a food product is classified as “excessive” in one or more critical nutrients if its relative content is higher than the corresponding maximum level recommended in the salt (32) or sugars (33) guidelines and the WHO population nutrient intake goals. These guidelines and goals refer to overall daily food intake rather than consumption of individual foods. However, since the consumption of foods classified as excessive in one or more critical nutrients makes it more likely for the diet to exceed the recommended nutrient goals, the model assumes that limiting such nutrients by setting thresholds based on the WHO guidance would help to achieve correct nutrient intake levels.<sup>2</sup>
  - (i) Sodium thresholds are based on the rationale that if the ratio between the amount of sodium (mg) in any quantity of the product and the energy content (kcal) is equal to or higher than 1:1, the product is considered excessive in sodium. The ratio is derived from a maximum recommended daily intake of 2000 mg of sodium (the WHO limit for adults), with an average total daily energy intake of 2000 kcal. (19; 32) The threshold is thus set at 1 mg sodium:1 kcal energy or lower wherever possible.
  - (ii) For sugar thresholds, the rationale is that a product has excessive free sugars if their contribution [free sugars (g) x 4 kcal] to the product’s total energy is equal to or higher than 10%. A lower threshold of 5% is used for sugar-sweetened beverages (33).<sup>3</sup>
  - (iii) Total fat is considered excessive if in any given quantity of the product the amount of energy (kcal) from total fat [total fat (g) x 9 kcal] is equal to or higher than 30% of the total energy (kcal). Saturated fat is considered excessive if the amount of energy (kcal) from saturated fat [saturated fat (g) x 9 kcal] is equal to or higher than 10% of total energy (kcal) (19).
- (g) The thresholds given are for single food items and not whole meals except in the category of composite dishes.
- (h) Foods and beverages for special uses, food supplements, dietetic formulations, alcoholic drinks, and breast milk substitutes, including so-called follow-up formula and growing-up milks are not included in this model (because they are subject to regulation

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<sup>2</sup> The detailed rationale for thresholds for each food category is provided in the Annex.

<sup>3</sup> In both adults and children, WHO recommends reducing the intake of free sugars to less than 10% of total energy intake (strong recommendation). WHO suggests a further reduction of the intake of free sugars to below 5% of total energy intake (conditional recommendation) in some specific situations. There is increasing concern that intake of free sugars particularly in sugar-sweetened beverages increases overall energy intake at the expense of foods containing more nutritionally adequate calories, contributing to excess weight gain and increased risk of NCDs, including dental caries. In line with the WHO recommendation the threshold of 5% is used for sugar-sweetened beverages.

by other standards). It should be noted that WHA resolution 39.28 (1986) states that the practice of providing infants with specially formulated milks is not necessary.

## 2.3 How to use the model

This model is designed for use by governments for the purposes of identifying foods and non-alcoholic beverages that should be subject to restricted marketing to children.<sup>4</sup> Food products that may or may not be marketed should be determined as follows:

- (a) Identify which food category the product falls under. In some cases, this will be clear from the food category name (for example, breakfast cereals; yoghurts). In some cases, it may be necessary to refer to the Codex number column, or the examples provided in the “Examples of food items”.
- (b) Once the appropriate food category has been identified, the nutritional content of the product provided in the nutrient declaration panel is cross-checked against the thresholds. A food product must not exceed (on a per 100 g/ml basis) any of the relevant thresholds provided in the model for that food product category if marketing is to be permitted. For example, in the case of breakfast cereals, a product must not exceed the criteria for total fat, total sugars or salt.
- (c) The quantities of nutrients in food products should, where possible, be calculated as sold or as reconstituted. Where a product needs to be reconstituted before it is eaten, e.g. soup, the nutrient amounts should be calculated based on 100 g of the product as reconstituted according to the manufacturer’s instructions.

### 2.3.1 Conditions for general exclusion from marketing

Marketing is systematically prohibited for the following:

- (a) Food products that contain >1% of total energy in the form of industrially produced trans-fatty acid (1% of energy = 20 kcal = 2.2 g trans-fat).
- (b) Food products with non-sugar sweeteners. While the use of non-sugar sweeteners may be safe for consumers, the concern for children in their formative years is both to avoid excessive sugar intake and to reduce the risk of acquiring the taste preference for sweet flavours (34). The presence of non-sugar sweeteners can be determined from the ingredient list.

### 2.3.2 Other considerations in the use of the nutrient profile model

Traditional food items consumed during cultural or religious festivities may be marketed for a determined period around the festive season.

Marketing of pre-packaged or restaurant quick-service/take-away combo meals should be restricted if any of the menu items contains a nutrient or nutrients that exceed related thresholds.

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<sup>4</sup> The definition of marketing to children will need to be established as part of the policy development process and may vary according to national context. WHO defines marketing as “any form of commercial communication or message that is designed to, or has the effect of, increasing the recognition, appeal and/or consumption of particular products and services. It comprises anything that acts to advertise or otherwise promote a product or service”



### 3. DEFINITIONS OF TERMS USED IN THE MODEL

**Children:** In this tool, the term “children” refers to persons aged 2 to 19 years.

**Marketing:** Various practices which constitute a commercial communication or message that is designed to, or has the effect of, increasing the recognition, appeal and/or consumption of particular products and services. It comprises anything that acts to advertise or otherwise promote a product or service, and the action or business of promoting and selling products or services, including market research and advertising.

**Advertising:** The paid public presentation and promotion of ideas, goods, or services by a sponsor that is intended to bring a product to the attention of consumers through a variety of media channels such as broadcast and cable television, radio, print, billboards, the Internet, or personal contact.

**Processed food:** Food products manufactured by industry in which salt, sugars, fat and/or other culinary ingredients have been added to unprocessed or minimally processed foods to preserve them or make them more palatable. Processed food products are derived directly from natural foods and are recognized as a version of the original foods. The processes used in the manufacture of these food products may include different methods of preparation, cooking, preservation and, in the case of cheeses and breads, non-alcoholic fermentation. Food-grade additives may be used to preserve the sensory properties and safety of these products.

**Total sugars:** refers to all sugars from whatever source in a food, and is defined as ‘all monosaccharides and disaccharides other than polyols’

**Free sugars:** include monosaccharides and disaccharides added to foods and beverages by the manufacturer, cook or consumer, and sugars naturally present in honey, syrups, fruit juices and fruit juice concentrates.<sup>5</sup>

**Added sugars:** are sugars added to foods and beverages by the manufacturer, cook or consumer during processing or preparation.<sup>6</sup>

**Non-sugar sweetener:** is a food additive (other than a mono- or disaccharide sugar), which imparts a sweet taste to a food. This functional class includes: sweetener, intense sweetener, bulk sweetener.<sup>7</sup> It should be noted that products like sugars, honey and other food ingredients that can be used to sweeten are not associated with the term “sweetener”.

**Total fat:** The total fat content of a food product composed of fatty acids from the three main groups (saturated fatty acids, mono-unsaturated fatty acids, and poly-unsaturated fatty acids), which are differentiated based on their chemical formula and structure.

**Saturated fat:** Fat molecules with no double bonds in between the carbon atoms. Saturated fat refers to the major saturated fatty acids in the diet, namely C14, C16 and C18,<sup>8</sup> except in the case of milk and coconut oil where saturated fatty acids range from C4 to C18.

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<sup>5</sup> Guideline: Sugars intake for adults and children. Geneva: World Health Organization; 2015.

<sup>6</sup> Nishida C, Martinez Nocito F, Mann J (eds). Joint FAO/WHO Scientific Update on Carbohydrates in Human Nutrition. European Journal of Clinical Nutrition, 2007, 61 (Suppl. 1): S1 - S137.

<sup>7</sup> CAC/GL 36-1989 (Class Names and the International Numbering System for Food Additives).

<sup>8</sup> C14=myristic acid (sources include coconut and palm nut oils and most plant and animal fats); C16=palmitic acid (from animal and plant fats); C18=stearic acid (from animal fats and some plant fats).

**Trans-fat:** Industrially-produced trans-fatty acids: A form of fat produced by partial hydrogenation of unsaturated fatty acids (vegetable oils) to create semi-solid fats for use in commercial baking and frying, margarines and food manufacturing. Trans-fats also occur naturally in the milk and meat of certain animals.

**Sodium:** A soft, silver-white element found in salt; 2.5 g of salt contains about 1 g of sodium.

**Energy:** Total chemical energy available in food (in kilocalories) and its macronutrient constituents (carbohydrates, fats, and proteins).

## 4. THE NUTRIENT PROFILE MODEL FOR THE WHO AFRICAN REGION

Food Category	Examples of food items	Codex Food Category code	Marketing prohibited if thresholds exceed values per 100 g <sup>910</sup>					
			Total fat (g)	Saturated fat (g)	Total sugars (g)	Added sugars (g) <sup>11</sup>	Sodium (g)	Energy (kcal) <sup>12</sup>
1 <b>Chocolate and sugar confectionery, energy bars, sweet topping and desserts</b>	Cocoa/Chocolate bars (including milk, dark and white chocolate) chocolate spread, imitations and chocolate substitutes, cereal, granola and muesli bars, table sugars, flour-based confectionaries, hard soft and chewy candy, chewing gum, caramels, soft jellied candies, marshmallow, sweet sauces, sweet desserts, creamy desserts, hard boiled sweets (such as lollipop)	5.1.1, 5.1.2 (except for products used to prepare chocolate milk or hot chocolate), 5.1.3, 5.1.4, 5.1.5, 5.2, 5.3, 5.4	8.0	No threshold provided	6.0	No threshold provided	No threshold provided	230
2 <b>Cakes, sweet biscuits and pastries, other sweet bakery products, dry mixes for making such<sup>13</sup></b>	Pastries; croissants, Cakes, cookies, pies, doughnuts, sweet rolls, muffins, macarons, breakfast biscuits (such as chocolate-covered biscuits), sweet pancake (ready-to-eat form), Buns with sweet fillings, Maandazi, chocolate pudding, plum pudding, bread pudding	7.2	8.0	No threshold provided	6.0	No threshold provided	0.25	230
3 <b>Bread, bread products and crisp bread</b>	Bread and rolls, crackers, mixes for making bread and ordinary bakery wares, mixes for making pizza, savoury pancake, wraps/tortillas, bread with raisins, buns, bread with cereal, rusks	7.1	8.0	No threshold provided	6.0	No threshold provided	0.25	No threshold provided
4 <b>Breakfast cereals</b>	Whole, broken or flaked grains of rice and other cereals, rice-based, wheat-based or maize-based breakfast cereals of all flavours, oat meal, mueslis, rice cakes, porridge (dried, as	6.1, 6.3, 6.7	12.0	No threshold provided	9.0	No threshold provided	0.35	No threshold provided
5 <b>Ready-to-eat savouries (savoury snack foods)<sup>14</sup></b>								
<b>(a) ready to eat savoury snacks Potato, cereal or starch-based (from roots, tuber, or legumes)</b>	Popcorn, other snacks made from rice, maize, wheat, potato, cassava, plantain (i.e. chips, crisps)	15.1	8.0	No threshold provided	No threshold provided	0.0	0.25	230

<sup>9</sup> Refer to the Annex for rationale /justification on thresholds.

<sup>10</sup> Most thresholds have been rounded up to the nearest half or one decimal where relevant, to allow for minor variations in products.

<sup>11</sup> If no threshold is provided for added sugar, but a threshold has been set for total sugar, the sum of both intrinsic sugar and added sugar will be considered as the limiting threshold.

<sup>12</sup> Energy threshold not provided for staple foods, beverages and sauces, dips, other seasonings and dressings

<sup>13</sup> This category name in the SEAR model is "Fine bakery wares". This denomination from the Western Pacific Region model was adopted for the AFR model during the regional consultation.

<sup>14</sup> In the national adaptation of the model, a threshold for added sugars should be set for (a) and (b) to cover sugar-coated popcorn, nuts, wheat puffs, chips, etc.

Food Category	Examples of food items	Codex Food Category code	Marketing prohibited if thresholds exceed values per 100 g <sup>910</sup>					
			Total fat (g)	Saturated fat (g)	Total sugars (g)	Added sugars (g) <sup>11</sup>	Sodium (g)	Energy (kcal) <sup>12</sup>
<b>(b) Processed nuts and edible seeds</b>	Nuts, and mixed nuts (including with fruit content), edible seeds	15.2	No threshold provided	No threshold provided	No threshold provided	0.0	0.05	No threshold provided
<b>(c) Fish-based</b>	Fish-based snacks	15.3	No threshold provided	No threshold provided	6.0	No threshold provided	0.25 <sup>15</sup>	230
<b>6 Beverages</b>								
<b>(a) Juices</b>	100% fruit and vegetable juices prepared from fresh or reconstituted from concentrate, smoothies	14.1.2, 14.1.3	No threshold provided	No threshold provided	6.0	0	0.30 <sup>16</sup>	No threshold provided
<b>(b) Milk and dairy based drinks<sup>17</sup></b>	Milks and sweetened milks, reconstituted powdered milk, flavoured dairy products a, sour milk, fermented dairy-based products (chocolate milk, strawberry milk, cocoa, drinking yoghurt), condensed milk, milk shakes, sweetened creamer. <i>Milk means milk from animals such as cows, goats, camels etc.</i>	1.1	4.0 <sup>18</sup>	No threshold provided	No threshold provided	0.0	No threshold provided	No threshold provided
<b>(c) Water-based flavoured and unflavoured drink</b>	Sport, energy drinks <sup>19</sup> , electrolyte drinks, carbonated and non-carbonated water-based flavoured drinks (i.e. soft drinks), powdered juices, concentrates (liquid or solid) calculated as or in ready-to-drink form, flavoured waters (sparkling), reconstituted chocolate or malted powdered drinks, syrups, sugar cane juices	14.1.4	No threshold provided	No threshold provided	0.0	No threshold provided	0.1	No threshold provided
<b>(d) Coffee, coffee substitutes, tea, herbal infusions</b>	Coffee, including instant and premixed coffee, coffee substitute, tea including instant and premixed tea, herbal infusion to be prepared or in ready-to-drink form	14.1.5	No threshold provided	No threshold provided	0.0	No threshold provided	No threshold provided	No threshold provided

<sup>15</sup> The sodium threshold is double what is allowed based on calculation of 1mg/1kcal to allow for processing needs.

<sup>16</sup> As some vegetable juices are made with added salt, the threshold is set to restrict those products with added salt.

<sup>17</sup> Follow-up formulas and growing-up milks are not covered by the model. It should be noted that World Health Assembly resolution WHA 39.28 adopted in 1986, states that the practice of providing infants with specifically formulated milks (so called “follow-up milks”) is not necessary. Further, any food or drink given before complementary feeding is nutritionally required may interfere with the initiation or maintenance of breastfeeding and should, therefore, be neither promoted nor encouraged for use by infants during this period.

<sup>18</sup> Based on the fat content of full fat milk.

<sup>19</sup> There is no agreement on a definition of energy drinks. However, such category of drinks includes a variety of non-alcoholic beverages. While caffeine is considered the main ingredient, several other substances are often present. The most common of these include guarana, taurine, glucuronolactone and vitamins. A common feature is that these beverages are marketed for their actual or perceived effects as stimulants, energizers and performance enhancers.

Food Category		Examples of food items	Codex Food Category code	Marketing prohibited if thresholds exceed values per 100 g <sup>910</sup>					
				Total fat (g)	Saturated fat (g)	Total sugars (g)	Added sugars (g) <sup>11</sup>	Sodium (g)	Energy (kcal) <sup>12</sup>
	<b>(e) Cereal, legumes, grain, tree nut-based beverages</b>	Cereal, grain and tree nut-based beverages produced from the extracts of cereals, pulses and tree nuts (e.g. rice-, almond-, soya, oat-based beverages).	14.1.5, 6.8.1	No threshold provided	No threshold provided	6.0	0.0 <sup>20</sup>	0.1	No threshold provided
7	<b>Frozen dairy-based desserts and edible ices</b>	Ice cream, ice milk, frozen yoghurt, ice lollies and sorbets	1.7, 3	6.0	No threshold provided	12.0	No threshold	0.10	230
8	<b>Other dairy based desserts</b>	Dairy based products that have been curdled by fermentation, acid, enzyme, heat, etc. and flavoured with sugar and other ingredients. Examples are flavoured cream-type yoghurt, jellied milk, butterscotch, chocolate mousse, puddings (including rice pudding, milk pudding), flan, custard	1.7	4.0	No threshold provided	6.0	No threshold provided	0.10	230
9	<b>Cheese and analogues</b>	Unripe or ripened cheese, processed cheese, cheese analogues, that can be classified based on physical characteristics as hard (e.g. Parmesan), semi-hard (e.g. cheddar, edam), semi-soft and soft (e.g. mozzarella, ricotta) as well as serving style as sliced cheese, cream cheeses, grated or powdered cheeses, spreadable cheeses, cottage cheese, processed cheese	1.6	20.0	No threshold provided	No threshold provided	0.0	0.60	No threshold provided
10	<b>Composite foods (Prepared foods, ready-made and convenience foods and composite dishes)</b>	Mixtures of multiple components (e.g. meat, sauce, grain, cheese, vegetables). These include foods that require minimal preparation (heating, thawing, rehydrating) or the ready-to-serve meal from restaurants. Examples: frozen and chilled ready meals, pizzas, lasagna, ready-made sandwiches, soups, burgers in buns, ready meals, soups, tinned spaghetti, baked bean, filled pastas, French fries	16, 12.5.1, 12.5.2	12.0	3.5	9.0	No threshold provided	0.35	No threshold provided
11	<b>Butter and other fats and oils, and fat emulsions</b>	Vegetable oils and fats, lard, ghee, fish oils and other animal fats, butter, margarine and similar products. Examples: cooking oils from plant and animal sources, fat blends, nuts spread (e.g. peanut butter)	2.1, 2.2	No threshold provided	35.0	No threshold provided	0.0	0.10	No threshold provided
12	<b>Pasta and noodles and like products, rice and grains</b>	Fresh, precooked, or dried noodles and pastas and like products, rice paper, rice noodles, vermicelli made from wheat, tapioca, sago, brick paper etc. (sold as ready-to-eat)	6.4	3.0	No threshold provided	No threshold provided	0.0	0.25	No threshold provided

<sup>20</sup> To limit products with added sugars.

Food Category	Examples of food items	Codex Food Category code	Marketing prohibited if thresholds exceed values per 100 g <sup>910</sup>						
			Total fat (g)	Saturated fat (g)	Total sugars (g)	Added sugars (g) <sup>11</sup>	Sodium (g)	Energy (kcal) <sup>12</sup>	
<b>13</b> <b>Fresh and frozen meat, poultry, game, fish and seafood</b>	Fresh and frozen meat, poultry, game, molluscs, crustaceans, echinoderms in the forms of whole pieces, cuts/fillet, comminuted/ minced/creamed.  Examples: beef, pork, chicken, lamb, goat, tuna, mackerel, catfish, shrimp, ox tails, Turkey tails, mutton flap, organ meats, eggs, oily fish (e.g. herring) etc.	8.1, 8.2.3, 9.1, 9.2.1, 9.2.3	15.0	No threshold provided	No threshold provided	No threshold provided	No threshold provided	No threshold provided	
<b>14</b>	Processed meat, poultry, game, fish and fish products								
<b>(a) Processed meat, poultry and game products</b>	Non-heat and heat treated whole pieces or cuts or commuted meat, poultry and game that have been cured and dried or fermented.  Examples: smoked ham, salted dried meat, salami, sausage, bacon, corned beef, smoked duck, canned meats, chicken nuggets, beef or chicken patty, pork rind, liver pate	8.2.1, 8.2.2, 8.3.1, 8.3.2	8.0	3.0	No threshold provided	No threshold provided	0.40	No threshold provided	
<b>(b) Processed fish and seafood products</b>	Frozen battered, cooked and/or fried, smoked, dried, fermented, and/or salted, semi-preserved by pickling or brining, fully-preserved by canning or fermentation of fish and sea foods.  Examples: salted fish and seafood, brined fish, salted fish in oil, fermented fish and seafood, anchovies, shrimp paste, canned tuna, sardine, or mackerel, smoked fishes, dried shrimp, fish balls, fish finger, fish burger	9.2.2, 9.2.4, 9.3, 9.4	8.0	3.0	No threshold provided	No threshold provided	0.40	No threshold provided	
<b>15</b> <b>Fresh and frozen fruits and vegetables, legumes, roots and tubers<sup>21</sup></b>	Fruits, vegetables, mushrooms, roots and tubers, pulses and legumes, seaweed, fresh coconut	4.1.1, 4.1.2.1, 4.2.1, 4.2.2.1	Permitted						

<sup>21</sup> Fresh and frozen fruits and vegetables, legumes, roots and tubers products with added salt or sugar are excluded from this category. These products should be classified in category 16 "processed fruits, vegetables and legumes" and the thresholds defined for category 16 applied.

Food Category		Examples of food items	Codex Food Category code	Marketing prohibited if thresholds exceed values per 100 g <sup>910</sup>					
				Total fat (g)	Saturated fat (g)	Total sugars (g)	Added sugars (g) <sup>11</sup>	Sodium (g)	Energy (kcal) <sup>12</sup>
16	<b>Processed fruits, vegetables, and legumes</b>	Dried fruits <sup>22</sup> , canned or bottled, jam, jellies, marmalades, packed in vinegar, oil or brine; pickled, candied, pulp, purees, topping, fermented, fillings, cooked forms of fruits and vegetables.  Examples: fruits and vegetables in vinegar, oil or brine, dried coconut, coconut cream, marmalade, jams, canned fruits, vegetables and legumes, dried mushrooms, preserved or pickled fruits and vegetables, fermented vegetables	4.1.2, 4.2.2	5.0	No threshold provided	No threshold provided	0.0	0.40	No threshold provided
17	<b>Solid-form soybean products</b>	Soybean-based products, soybean curd (tofu), semi-dehydrated tofu, dehydrated tofu (kori tofu), fermented soybeans (natto), other soybean protein products (soya nuggets and textured vegetable protein)	6.8.2, 6.8.3, 6.8.4, 6.8.5, 6.8.6, 6.8.7, 6.8.8, 12.9.1	8.0	No threshold provided	No threshold provided	0.0	0.10	No threshold provided
18	<b>Sauces, dips, other seasonings and dressings</b>	Emulsified, non-emulsified mixes as concentrated, clear sauces and like products, soybean-based seasoning and condiments.  Examples: mayonnaise, salad dressing, onion dips, tomato ketchup, gravy, cheese sauce, cream sauce, bouillon cubes, seasoning powder, fermented and unfermented soy sauces, fish sauce, sweet chili sauce, spaghetti sauce, BBQ sauces,	12.6, 12.9.2	8.0	No threshold provided	No threshold provided	0.0	0.30	No threshold provided

<sup>22</sup> This is in line with the WHO Guideline on sugars intake in adults and children (WHO 2015), as dried fruits are a significant source of concentrated sugars for children. However, it is recognized that countries, according to national context and national food-based dietary guidelines, may permit the marketing of dried fruits in small portions.

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## ANNEX: JUSTIFICATION/EXPLANATIONS OF THE NUTRIENT THRESHOLDS

FOOD CATEGORY	EXAMPLES OF FOOD ITEMS	RATIONALE
1.	Chocolate and sugar confectionery, energy bars, sweet topping and deserts	<p>Cocoa/Chocolate bars (including milk, dark and white chocolate) chocolate spread, imitations and chocolate substitutes, cereal, granola and muesli bars, table sugars, flour-based confectionaries, hard soft and chewy candy, chewing gum, caramels, soft jellied candies, marshmallow, Sweets sauces, sweet dessert, creamy desserts, hard boiled sweets (such as lollipop)</p> <p>Most confectionary items cannot be produced without the use of high amounts of sugar or non-sugar sweetener. On a 2000 kcal diet, based on the assumption that one snack would contribute 11.5% of total energy intake/day, the energy contribution from a snack is approximately 230 kcal or less. Thus, 230 kcal or more per 100g snack could be classified as an energy-dense snack. Therefore, 230 kcal/100 g is set as a threshold for energy and used for calculation of thresholds for fat and sugar.</p> <p>The thresholds for fat and sugars are set based on WHO/FAO population nutrient intake goals that fats and simple sugars should contribute to 30% and 10% of total energy, respectively.</p> <p>Sample calculation: Energy contribution from 30% fat = <math>230 \times 30 / 100 = 69</math> kcal. Conversion to grams = <math>69 / 9 = 7.6</math>g/100 g.</p> <p>Energy contribution from 10% sugar = <math>230 \times 10 / 100 = 23</math> kcal. Conversion to grams = <math>23 / 4 = 5.7</math>g/100g. All thresholds have been rounded up to the nearest whole number to allow for minor variation in product categories.</p>
2.	Cakes, sweet biscuits and pastries, other sweet bakery products, dry mixes for making such	<p>Pastries; croissants, cakes, cookies, pies, doughnuts, sweet rolls, muffins, macarons, breakfast biscuits (such as chocolate-covered biscuits), sweet pancake (ready-to-eat form), buns with sweet fillings, <i>maandazi</i>, chocolate pudding, plum pudding, bread pudding</p> <p>Most fine bakery wares cannot be produced without the use of high amounts of sugar or non- sugar sweetener.</p> <p>On a 2000 kcal diet, based on the assumption that one snack would contribute 11.5% of total energy intake/day, the energy contribution from a snack is approximately 230 kcal or less.</p> <p>Thus, 230 kcal or more /per 100g snack could be classified as an energy-dense snack. Therefore, 230 kcal/100 kcal is set as the energy threshold and used for calculation of thresholds for fat and sugar.</p> <p>For fat and sugars, thresholds are based on WHO/FAO population nutrient intake goals that fats and simple sugars should contribute to 30% and 10% of total energy, respectively.</p> <p>Sodium intake is calculated as 1 mg/1 kcal, or lower (based on the recommendation of 2000 mg /2000 kcal).</p> <p>All thresholds have been rounded up to the nearest round number or 2 decimal places (sodium) to allow for minor variation in product categories.</p>
3.	Bread, bread products and crisp bread	<p>Bread and rolls, crackers, mixes for making bread and ordinary bakery wares, mixes for making pizza, savoury pancake, rotis, wraps/tortillas, bread with raisins, buns, bread with cereal, rusks</p> <p>On average, energy from bread, a staple food is 250 kcal/100g. (USDA Food Composition Databases, <a href="https://ndb.nal.usda.gov">https://ndb.nal.usda.gov</a>).</p> <p>Fat and sugars thresholds are based on WHO/FAO population nutrient intake goals that fat and simple sugars should contribute 30% and 10% of total energy, respectively (sugar content is also adequate for yeast leavened products).</p> <p>For sodium, the recommendation is 1 mg/1 kcal (based on 2000 mg per 2000 kcal). All thresholds have been rounded up to the nearest round number or 2 decimal places (sodium) to allow for minor variation in product categories.</p>
4.	Breakfast cereals	<p>Whole, broken or flaked grains of rice and other cereals, rice-based, wheat-based or maize-based breakfast cereals of all flavours, oat meal, mueslis, rice cakes, porridge (dried, as sold)</p> <p>The thresholds for cereals are based on average energy levels in commercial breakfast cereals, which are approximately 350 kcal/100 g. (<a href="https://ndb.nal.usda.gov/ndb/search/list">https://ndb.nal.usda.gov/ndb/search/list</a>).</p> <p>Sodium is limited at 1 mg/1 kcal (based on 2 000 mg/2 000 kcal), providing a threshold of 350 mg sodium.</p> <p>Fat and sugar contents are based on WHO/FAO population nutrient intake goals that fats and simple sugars should contribute 30% and 10% of total energy, respectively. Therefore, fat and sugar thresholds are 11.6 and 8.8 g, respectively and have been rounded up to the nearest round number to allow for minor variation in product categories.</p>

FOOD CATEGORY	EXAMPLES OF FOOD ITEMS	RATIONALE
<b>5.</b>	<b>Ready-to-eat savouries (savoury snack foods)</b>	
(a) ready to eat savoury snacks potato, cereal or starch-based (from roots, tuber, or legumes)	Popcorn and maize corn, other snacks made from rice, maize, wheat, potato, cassava, plantain (i.e. chips, crisps)	<p>The average energy content of most snacks of this type is 200-300 kcal/100 g. On a 2000 kcal diet, based on the assumption that one snack would contribute 11.5% of total energy intake/ day, the energy contribution from a snack is approximately 230 kcal or less. Thus, 230 kcal or more /per 100g snack could be classified as an energy dense snack. Therefore, 230 kcal/100 kcal is set as a threshold for energy and used for calculation of thresholds for fat and sugar. Fat and sugar thresholds are based on WHO/FAO population nutrient intake goals that fats and simple sugars should contribute 30% and 10% of total energy, respectively.</p> <p>Sodium content should be limited to 230 mg/100 g (1 mg/1 kcal), which is feasible since the sodium contents in these products is usually in the range of 100-1800 mg/100 g. (USDA Food Composition Databases, <a href="https://ndb.nal.usda.gov">https://ndb.nal.usda.gov</a>).</p> <p>All thresholds have been rounded up to the nearest round number or 2 decimal places (sodium) to allow for minor variation in product categories.</p>
(b) Processed nuts and edible seeds	Nuts, and mixed nuts (including with fruit content), edible seeds	<p>The sodium threshold indicated is for unsalted nuts and accounts for the natural sodium in different varieties of nuts (USDA Food Composition Databases, <a href="https://ndb.nal.usda.gov">https://ndb.nal.usda.gov</a>). No limit is given for total fat since fat content varies significantly between kinds of nuts and nuts contain healthy fats. This criterion aims for nuts that are not deep fried.</p>
(c) Fish-based	fish-based snacks	<p>On a 2000 kcal diet, based on the assumption that one snack would contribute 11.5% of total energy intake/day, the energy contribution from a snack is approximately 230 kcal or less. Thus, 230 kcal or more /per 100g snack could be classified as an energy-dense snack. Therefore, 230 kcal/100 kcal is set as a threshold for energy and also used for calculation of thresholds for fat and sugar. Sugar threshold is based on WHO guideline that simple sugars should contribute 10% of total energy.</p> <p>Fish based snacks contain protein (range from 10-60 g/100g) and are low in fat, however they may contain high sodium and sugar. Salt is added in the process of making a protein gel and flavouring and therefore, sodium content ranges from 1600-2700mg/100g. (Kasetsart J. (Nat. Sci.) 33 : 270–276 (1999). Nutrient Contents of Commercial Snack Food Products <a href="http://kasetsartjournal.ku.ac.th/kuj_files/2008/A0804281507410760.pdf">http://kasetsartjournal.ku.ac.th/kuj_files/2008/A0804281507410760.pdf</a>.)</p> <p>This product could be reformulated for a better nutrition profile by using minimum salt and sugar as necessary for processing and flavouring. Sodium threshold is set as 1 mg:1 kcal.</p>
<b>6.</b>	<b>Beverages</b>	
(a) Juices	100% fruit and vegetable juices prepared from fresh or reconstituted from the concentrate, smoothies	<p>WHO guidelines recommend limiting intake of all sources of free sugars, i.e. sugars naturally presented in honey, syrups, fruit juices, which may also contribute to excess energy intake.</p> <p>WHO recommendation on free sugars consumption is 10% of total energy intake and the desirable recommendation is to reduce to 5%. Most 100% fruit juices contain sugar of 10–14 g/100 g.</p> <p>By mixing fruit with vegetable juice, the sugar content can be reduced. Coconut water contains approximately 6g/100 g and therefore, the threshold for sugars is set at 6g/100g.</p> <p>As some vegetable juices are made by adding some sodium, the threshold is set at 0.30 g/100g to restrict those products with added sodium.</p>

FOOD CATEGORY		EXAMPLES OF FOOD ITEMS	RATIONALE
	(b) Milk and dairy based drinks	Milks and sweetened milks, butter milk, reconstituted powdered milk, flavoured dairy-based milk, sour milk, fermented dairy-based milk e.g. chocolate milk, strawberry milk, cocoa, drinking yoghurt, condensed milk, milk shakes, sweetened creamer, evaporated milk.  Milk means milk from animals such as cows, goats, camels, etc.	The USDA's standards for whole milk state that the milk must have at least 3.25 per cent milk fat. Most milk consumed in Africa comes from cows, goats or camels. According to FAO, fat constitutes approximately 3 to 4 per cent of the solid content of cow's milk ( <a href="http://www.fao.org/dairy-production-products/products/milk-composition/en/">http://www.fao.org/dairy-production-products/products/milk-composition/en/</a> ). Therefore, the threshold of total fat is set at 4.0 based on the fat content of whole cow milk.
	(c) Water-based flavoured and unflavoured drink	Sport, energy drink, electrolyte drinks, carbonated and non-carbonated water-based flavoured drink (i.e. soft drinks), juice drinks, powdered juices, concentrates (liquid or solid) in or calculated as ready-to-drink form bottled water, flavoured waters (aerated), reconstituted chocolate or malted powdered drinks, syrups, sugar cane juices	This category includes all soft drinks. The total sugar threshold was set at 0 to discourage any form of advertisement to children of all kinds of beverages containing added sugar.  Concentrations of sodium in potable water are typically less than 20 mg/l but can greatly exceed this in some countries. No firm conclusions can be drawn concerning the possible association between sodium in drinking-water and the occurrence of hypertension. Therefore, no health-based guideline value is proposed. However, concentrations in excess of 200 mg/l may give rise to unacceptable taste ( <a href="http://www.who.int/water_sanitation_health/water-quality/guidelines/chemicals/sodium-fs-new.pdf?ua=1">http://www.who.int/water_sanitation_health/water-quality/guidelines/chemicals/sodium-fs-new.pdf?ua=1</a> ).  Therefore, the salt threshold was set at 0.1g/100g of product so as not to permit the marketing of beverage containing sodium beyond the authorized composition in drinking water.
	(d) Coffee, coffee substitutes, tea, herbal infusions	Coffee including instant and premixed coffee, coffee substitute, tea including instant and premixed tea, herbal infusion in or calculated as ready-to-drink form	A threshold of 0g for total sugar/100g product (like water-based flavoured and unflavoured drink) has been set to discourage any form of advertisement to children of all kinds of beverages containing added sugar.
	(e) Cereal, legumes, grain, tree nut-based beverages	Cereal, grain and tree nut-based beverages produced from the extracts of cereals, beans, pulses and tree nuts e.g. rice-, almond-, soya, oat-based beverages.	Cereal, grain and tree nut-based beverages consist of water and sugar as well as protein and starch. The limitation is on sugar, which is allowed to be higher than in flavoured drinks in order to make it palatable. Therefore, the same threshold used for juices is used for these beverages. However, to limit the products with added sugars, an additional threshold was set at 0.0g for added sugars.  The sodium content is limited based on what are usually found in soya beverage and soya milk (40-54 mg /100ml). The sodium thresholds have been rounded up to be consistent with the "Water- based flavoured and unflavoured" drinks.
7.	Frozen dairy-based desserts and edible ices	Ice cream, ice milk, frozen yoghurt, ice lollies and sorbets.	On a 2000 kcal diet, based on the assumption that one snack would contribute 11.5% of total energy intake/day, the energy contribution from a snack is approximately 230 kcal or less. Thus, 230 kcal or more per 100g snack could be classified as an energy dense snack. Therefore, 230 kcal/100 kcal is set as a threshold for energy and also used for calculation of thresholds for fat and sugar. Fat and sugar thresholds are based on WHO/FAO population nutrient intake goals that fats and simple sugars should contribute to 30% and 10% of total energy, respectively.  A wide range of fat content was found in these groups of products during the pilot test (range 2.6-19 g/100 g). We set the threshold for total fat at 6.0 g fat/100g to be consistent with the confectionery category and general justification for snacks.  According to calculations, sugar threshold should be at 6g/100g; however 12 g/100 g is used since low sugar creates a non-biteable hard ice crystal ( <a href="http://icecreams.com/sugar-in-ice-cream">icecreams.com/sugar-in-ice-cream</a> ). This level of sugar is like natural fruit juice and should also provide an acceptable taste similar to a sorbet. Sodium content is

FOOD CATEGORY		EXAMPLES OF FOOD ITEMS	RATIONALE
			based on what is generally found in manufactured products. Sodium intake is calculated as lower than 1mg/1 kcal (USDA Food Composition Databases, <a href="https://ndb.nal.usda.gov">https://ndb.nal.usda.gov</a> ).
8.	Other dairy based desserts	Dairy-based products that have been curdled by fermentation, acid, enzyme, heat, etc. and flavoured with sugar and other ingredients. Examples are flavoured cream-type yoghurt, jellied milk, butterscotch, chocolate mousse, puddings (including rice pudding, milk pudding), flan, custard	<p>On a 2000 kcal diet, based on the assumption that one snack would contribute 11.5% of total energy intake/day, the energy contribution from a snack is approximately 230 kcal or less. Thus, 230 kcal or more /per 100g snack could be classified as an energy-dense snack. Therefore, 230 kcal/100 kcal is set as a threshold for energy and also used for calculation of thresholds for fat and sugar. The thresholds are based on WHO/FAO population nutrient intake goals that fats and simple sugars should contribute to 30% and 10% of total energy, respectively. Sodium is calculated as 1 kcal :1 mg or lower.</p> <p>These products are good sources of protein and energy. Total sugar is limited at 6 g/100g based on WHO/FAO population nutrient intake goals that simple sugars should contribute 10% of total energy.</p> <p>The fat threshold is set at 4.0 to consider the use of whole cow milk and is set at a similar level as for milk and dairy based drinks. Sodium content is based on what is generally found (USDA Food Composition Databases, <a href="https://ndb.nal.usda.gov">https://ndb.nal.usda.gov</a>). Thresholds have been rounded up to allow for minor variation in product categories.</p>
9.	Cheese and analogues	Unripened or ripened cheese, processed cheese, cheese analogues, that can be classified based on physical characteristics as hard (e.g. Parmesan), semi-hard (e.g. cheddar), medium-hard (e.g. edam), semi-soft and soft (e.g. mozzarella, ricotta) as well as serving style as sliced cheese, cream cheeses, grated or powdered cheeses, spreadable cheeses, cottage cheese, processed cheese	Cheese is a good source of protein and calcium. The kind with lower moisture content (hard cheeses) normally contains more protein and calcium as well as fat and sodium. Salt is required in production step especially water removal such as cheddaring. The fat content allowed is for semi-hard cheese that is generally consumed, and sodium content is allowed at the technical feasible level for production.
10.	Composite foods (Prepared foods, ready-made and convenience foods and composite dishes)	Mixtures of multiple components (e.g. meat, sauce, grain, cheese, vegetables). These include foods that require minimal preparation (heating, thawing, rehydrating) or the ready-to-serve meal from restaurants. Examples: frozen and chilled ready meals, pizzas, lasagna, ready-made sandwiches, soups, burgers in buns, ready meals, soups, tinned spaghetti, baked bean, filled pastas, French fries	The thresholds have been calculated as per 350kcal/100g since most available products are estimated to contain an energy range of approximately 250-450 kcal/100g (average 350kcal). As recommended in WHO/FAO population nutrient intake goals fat, saturated fat and sugar should contribute to 30% and 10% respectively. Thresholds are calculated as 11.6g (rounded to 12g), 3.5g and 8.8g (rounded to 9 g). Sodium threshold is set at 1mg/1 kcal (350mg). Thresholds have been rounded up to allow for minor variation in product categories.
11.	Butter and other fats and oils, and fat emulsions	Vegetable oils and fats, lard, ghee, fish oils and other animal fats, butter, margarine and similar products. Examples: cooking oils from plant and animal sources, fat blends, nuts spread (e.g. peanut butter)	<p>Fat and oil are good sources of energy. The concern relates to the quality of fat, especially the ratio of saturated fat which should not be more than 1/3 of consumed fat or oil. As mentioned in the population nutrient intakes, total energy contribution from fat and saturated fat should be less than 30% and 10%, respectively, of which saturated fat should be 1/3 of the total fat (weight for weight).</p> <p>A threshold was added for added sugar set at 0.0 to not allow sweetening in the making of these food products.</p> <p>Sodium threshold is set as the lower range of sodium in manufactured products (USDA Food Composition Databases, <a href="https://ndb.nal.usda.gov">https://ndb.nal.usda.gov</a>).</p>

FOOD CATEGORY		EXAMPLES OF FOOD ITEMS	RATIONALE
12.	Pasta and noodles and like products, rice and grains	Fresh, precooked, or dried noodles and pastas and like products, rice paper, rice noodles, vermicelli made from wheat, tapioca, sago, brick paper etc. (cooked as ready to eat)	<p>These products are normally consumed as a staple, which should contribute 25% of total energy intake or 500 kcal on a 2000 kcal diet. The energy content in such products is approximately 250 kcal/100g.</p> <p>Since pastas and noodles are usually consumed in combination with other foods as a meal, it is assumed that half the energy (250 kcal) is from 100 g of pasta/noodle, and the other half would be possibly from a sauce, vegetable or meat preparation which would also contribute sodium to the meal.</p> <p>Pastas and noodle-like products mainly consist of starch, but the pre-cooking process may also include deep-frying where the fat content can be as high as 20g fat/100g product. Therefore, the fat threshold is set to discourage production/marketing of deep-fried products.</p> <p>The threshold for added sugar is set at 0.0 g added sugar/100g product to also discourage production/marketing of products with added sugar.</p> <p>The threshold for sodium from pasta is limited at about 250 mg /100 g (1 mg of sodium: 1 kcal) and rounded up.</p>
13.	Fresh and frozen meat, poultry, game, fish and seafood	<p>Fresh and frozen meat, poultry, game, molluscs, crustaceans, echinoderms in the forms of whole pieces, cuts/fillet, comminuted/minced/creamed.</p> <p>Examples: beef, pork, chicken, lamb, goat, tuna, mackerel, catfish, shrimp, ox tails, Turkey tails, mutton flap, organ meats, eggs, oily fish (e.g. herring) etc.</p>	<p>Animal meat is a source of good quality protein for children. However, some parts have a high fat content which should be avoided. Lean meat and chicken can contain up to 15g fat and therefore, this limit has been set (USDA Food Composition Databases, <a href="https://ndb.nal.usda.gov">https://ndb.nal.usda.gov</a>).</p>
14.	<b>Processed meat, poultry, game, fish and fish products</b>		
	(a) Processed meat, poultry and game products	<p>Non-heat and heat-treated whole pieces or cuts or comminuted meat poultry and game that have been cured and dried or fermented.</p> <p>Examples: smoked ham, salted dried meat, salami, sausage, bacon, corned beef, smoked duck, canned meats, chicken nuggets, beef or chicken patty, pork rind, liver pate</p>	<p>Cured meat products are also sources of protein and fat and used in situations where fresh meats may be unavailable. Some products however contain high fat, especially saturated fat (from added animal fat) as well as sodium from salt that is used for processing and flavouring.</p> <p>Fat is normally added to provide soft and chewy texture to meats such as sausages and sodium chloride is necessary for the flavouring and salting-in process of meat protein that acts as an emulsifier or binder. It is feasible to produce processed meat with a lower fat and sodium content and the thresholds are set considering manufactured products with the lower range of fat and sodium values (USDA Food Composition Databases, <a href="https://ndb.nal.usda.gov">https://ndb.nal.usda.gov</a>). The threshold for sodium is consistent with the data from the pilot test (the average in this category was 0.7 g / 100 g of product).</p> <p>The threshold for saturated fat is set at 3.0 to limit saturated fat to 1/3 of total fat and to be consistent with the "Processed fish and seafood" category.</p>
	(b) Processed fish and seafood products	<p>Frozen battered, cooked and/or fried, smoked, dried, fermented, and/or salted, semi-preserved by pickling or brining, fully-preserved by canning or fermentation of fish and sea foods.</p> <p>Examples: salted fish and seafood, brined fish, salted fish in oil, fermented fish and seafood, anchovies, shrimp paste, canned</p>	<p>Fish and seafood are locally available in many parts of the Region and are preserved locally by using salt or by canning, battering, or frying. Some forms of preservation can cause overconsumption of saturated fat and salt. The fat content is limited to 8 g/100g, as found in the drained canned tuna in oil (USDA Food Composition Databases, <a href="https://ndb.nal.usda.gov">https://ndb.nal.usda.gov</a>). Saturated fat is limited to 1/3 of total fat. Sodium content can be from salt added for both processing and flavouring, it is therefore reduced from usual levels of 900-1000 mg (<a href="https://www.caloriecount.com/calories-white-fish-ball-i132121">https://www.caloriecount.com/calories-white-fish-ball-i132121</a>) to 400 mg/100 g.</p>

FOOD CATEGORY		EXAMPLES OF FOOD ITEMS	RATIONALE
		tuna, sardine, or mackerel, smoked fishes, dried shrimp, fish balls, fish finger, fish burger	
15.	Fresh and frozen fruits and vegetables, and legumes	Fruits, vegetables, mushrooms, roots and tubers, pulses and legumes, nuts and seeds, seaweed, fresh coconut	Fresh fruits and vegetables are sources of dietary fibre, vitamins and minerals and increased consumption should be encouraged.
16.	Processed fruits, vegetables and legumes	Dried fruits, canned or bottled, jam, jellies, marmalades, packed in vinegar, oil or brine, pickles, candied, pulp, purees, topping, fermented, fillings, cooked forms of fruits and vegetables.  Examples: fruits and vegetables in vinegar, oil or brine, dried coconut, coconut cream, marmalade, jams, canned fruits, vegetables and legumes, dried mushrooms, preserved or pickled fruits and vegetables, fermented vegetables	Processing of fruits and vegetables aims to preserve fruits and vegetables for a longer shelf life. However, processing tends to change the natural nutrient content due to concentration or addition of sugar or sodium. Pickled fruits and vegetables should not be promoted in children.  If pickling is done as a means of preservation, minimum sodium should be used. Dried fruits and vegetables with no sugar and salt added can be promoted in children during off-seasons since about 50 grams of dried fruits and vegetables can be equal to 600 g of fresh fruits and vegetables. Calculation: Based on the assumption that fresh fruits and vegetables have a moisture content of approximately 93% and 7% of solids, and dried fruits and vegetables have a moisture content of approximately 10% and 90% of solids, 50 g of dried fruits and vegetables = $0.93 \times 50 \text{ g} / 0.07$ = would be approximately equivalent in weight and volume to 664 g of fresh fruit or vegetable approximately.  Some foods products are often prepared with fats. Accordingly, it was considered important to set a threshold for total fat in this category to restrict products with high fats. The value of 5g total fat/100g product was based on the estimated average of food products found for this category in the African Region during the pilot test (average of 4.5), and we rounded to 5.0 which is consistent with the threshold from the WHO European Region model.
17.	Solid-form soybean products	Soybean-based products, soybean curd (tofu), semi-dehydrated tofu, dehydrated tofu (kori tofu), fermented soybeans (natto), other soybean protein products (soya nuggets and textured vegetable protein)	Soybean is a good source of protein, calcium and polyunsaturated fatty acids. Different solid forms of soybean products are consumed in Africa.  The fat threshold is set at 8g/100g based on the average fat content in food products in this category found during the pilot test in the Region, which was approximately 6.5%. We rounded to set threshold at 8g total fat/100g product to be consistent with processed meat category.  The threshold of added sugar is set at 0.0g added sugar/100g product to not allow the marketing of products with added sugar. This is consistent with the WPR model.
18.	Sauces, dips, other seasonings and dressings	Emulsified, non-emulsified mixes as concentrated, clear sauces and like products, soybean-based seasoning and condiments.  Examples: mayonnaise, salad dressing, onion dips, tomato ketchup, gravy, cheese sauce, cream sauce, bouillon cubes, seasoning powder, fermented and unfermented soy sauces, fish sauce, sweet chili sauce, spaghetti sauce, BBQ sauces, chili paste, mustard sauce, mustard flour, harissa	These products are usually eaten in small portion sizes of 10g-30 g. In 100g of product, the content of sodium is approximately 400-20 000 mg/100g, fat content ranges from 0.1g-80g/100g fat, and sugar content is 0.2-73/100g, according to the pilot test data.  For sodium, a limit of 350 mg, the lower threshold found in tomato sauce is set, which would make only a small contribution to sodium intake, considering the small portion size consumed.  For fat, a threshold of 8g/100g is set to be consistent with "Processed fish and seafood products" and "Processed meat, poultry and game products" categories.  For sugar, a threshold of 0.0g added sugar/100g product is set to discourage adding too much sugar in these products.