



**JOINT FAO/WHO FOOD STANDARDS PROGRAMME
CODEX COMMITTEE ON NUTRITION AND FOODS FOR SPECIAL DIETARY USES**

**Forty-first Session
Düsseldorf, Germany
24 - 29 November 2019**

**DISCUSSION PAPER ON GENERAL GUIDELINES TO ESTABLISH
NUTRIENT PROFILES FOR FOOD LABELLING**

(Prepared by Costa Rica with support from the United States of America and Paraguay)

1. INTRODUCTION

At present, the definition of nutritional profiles has been the subject of debate in different publications without achieving a scientifically supported definition. However, nutritional profiles are generally considered a methodology that allows the evaluation and categorization of foods, according to their nutrient composition, in order to know their nutritional quality¹.

Nutrient profiles estimate the potential of food to influence the quality of the diet in general, however, it is not about classifying food as “good” and “bad”, but in identifying foods with better nutritional quality².

The main uses of nutritional profiles are to: provide guidelines to establish nutritional and healthy declarations in pre-packaged foods, advise on raw materials and the choice of recipes by restaurants and food services, be a tool for the elaboration of the legislation of the school and institutional canteens, regulate food advertisements in different media, help the development of healthy eating guidelines, provide the basis for the preparation of the frontal nutritional labelling of pre-packaged foods (FOPNL), be input for reformulation of food in the industrial food sector, regulate the prepackaged food available in food vending machines, be the basis for the choice of food in social programs with food support, among many others³.

In addition, they can have many other functions in the area of food and human nutrition, therefore, they are essential tools to promote healthy eating either voluntarily or mandatory. However, in isolation they will not be able to solve the problems of food and world health today. To maintain a healthy diet, many other factors must be taken into account in addition to a good choice of prepackaged foods, such as the frequency of consumption, the amounts or portions of food consumed, the variety of different foods, the sum of the nutritional value of all foods in the diet, conservation and cooking methods, among many others (WHO, 2011, p.4).

2. BACKGROUND

At the 39th session of the Codex Committee on Nutrition and Foods for Special Dietary Uses (CCNFSDU) the Codex Committee on Food Labelling (CCFL) asked about the need to work on the subject of nutrient profiling for labelling purposes in the CCNFSDU. In this regard, as detailed in REP18/NFSDU, paragraphs 157 to 161, Costa Rica, took the floor on behalf of Paraguay to present CRD4 and explained that the guidelines for the establishment of nutrient profiles would complement the work being developed in CCFL on front of pack nutrition labelling (FOPNL). In this regard, the Committee agreed that discussion on this issue be postponed until the next meeting and that Costa Rica analyze the possible pertinent issues, should it be necessary to send a circular letter CCNFSDU40.

¹ Nutrient profiling Report of a WHO/IASO technical meeting, 2011, p.3; Setting of nutrient profiles for accessing nutrition and health claims: proposals and arguments, 2008, p. 11-12.

² Setting of nutrient profiles for accessing nutrition and health claims: proposals and arguments, 2008, p. 10.

³ Nutritional profiles: Scientific intentionality versus real impact on public health, p. 26

During CCNFSDU40, the importance of continuing work and gathering more information that could serve as a basis for future work on the General Guidelines for nutrient profiling were noted.

Therefore, the Committee agreed that Costa Rica and Paraguay would undertake an inventory of nutrient profiles and continue preparing the discussion paper for consideration at CCNFSDU41. The Committee also noted the offer of the United States of America to assist in this work (REP19/NFSDU, para. 154).

3. INVENTORY OF NUTRITIONAL PROFILES

The following describes the process by which the inventory was carried out on nutrient profiles, which identified some common characteristics among the nutrient profiles developed for the elaboration of "Front of pack nutrition labelling" (FOPNL). This input could serve CCNFSDU to analyze the need to establish General Guidelines for the development of these profiles.

In this way, several publications⁴ were reviewed to provide information on the current nutrient profiles, with which the following databases were developed.

3.1 General Database. Nutrient Profiles Models (NPM) developed for different objectives.

The first database was created by Costa Rica and Paraguay, for informational purposes only, as it gathers NPM that have been developed for different purposes; for example, regulation in school canteens, regulation of children's advertisements, promotion and sale of food and beverages among others. The database can be accessed by downloading Appendix II at the following link:

http://www.fao.org/fileadmin/user_upload/codexalimentarius/doc/AppendixII_General_Database_NPM.xlsx

The general database includes 97 NPM, developed in different countries. Among its main creation objectives, it was found that 38% of profiles were created with the aim of developing FOPNL, 20% for regulating school feeding and 13% to regulate food advertisements aimed at children. (See Graph No.1).

⁴ Nutrient profiling Report of a WHO/IASO technical meeting London, United Kingdom 4–6 October 2010: World Health Organization 2011.

Catalogue of Nutrient Profile Models: Unpublished report prepared for WHO, 2012, available at the request of the "Codex Working Group in Costa Rica: Nutrition labelling on the front of the package".

WHO Regional Office for Europe nutrient profile model / World Health Organization 2015.

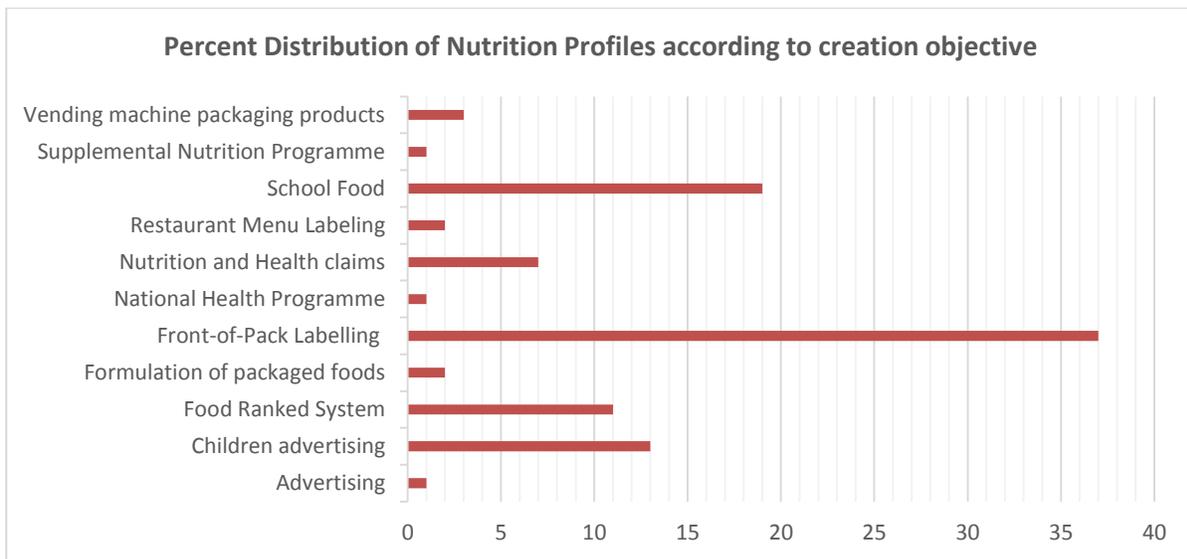
Nutritional profiles: Scientific intentionality versus real impact on public health / Fundación Iberoamericana de Nutrición (FINUT) 2016.

WHO Nutrient Profile Model for South-East Asia Region / World Health Organization 2017.

Nutrient Profile Models with Application in Government-Led Nutrition Policies Aimed at Health Promotion and Non communicable Disease Prevention: A Systematic Review. Labonté, MÉ., Poon, T., Gladanac, B., Ahmed, M., Franco, B., Rayner, M. y L'Abbé, M. (2018).

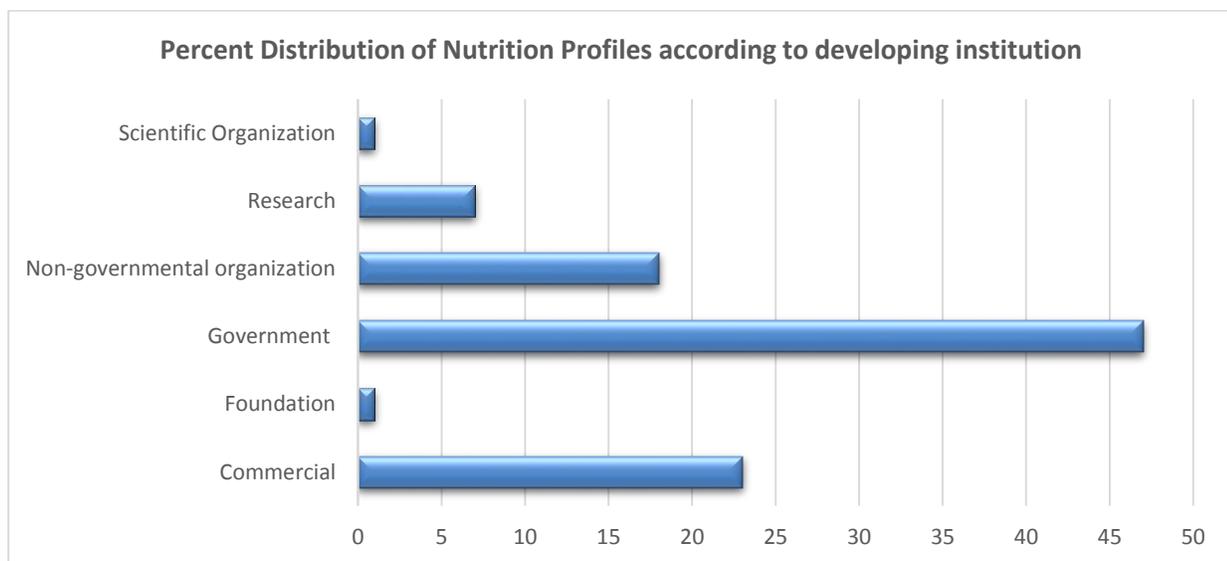
Questionnaire prepared by the Electronic Working Group led by Costa Rica "Consideration of issues related to Nutrition Labeling in the Packaging Front" (2016-2017).

Graph No. 1



It was also identified that 48% of the models were developed by the government, followed by the industrial sector with 24% and by non-governmental organizations 19%. (See chart No. 2). In terms of geographical area of processing, 31% were developed in North America (Canada, United States and Mexico), 24% were produced on the European continent, followed by 12% developed by international organizations.

Graph No. 2



The period with the greatest development of Nutritional Profiles was from 2001 to 2007 with 37% and subsequently the period from 2008 to 2012 was 27%. The target population of these models is mainly for the general population with 62% and secondly the child population with 37%.

3.2 Adjusted Database. Nutritional Profiles Models (NPM) developed for FOPNL

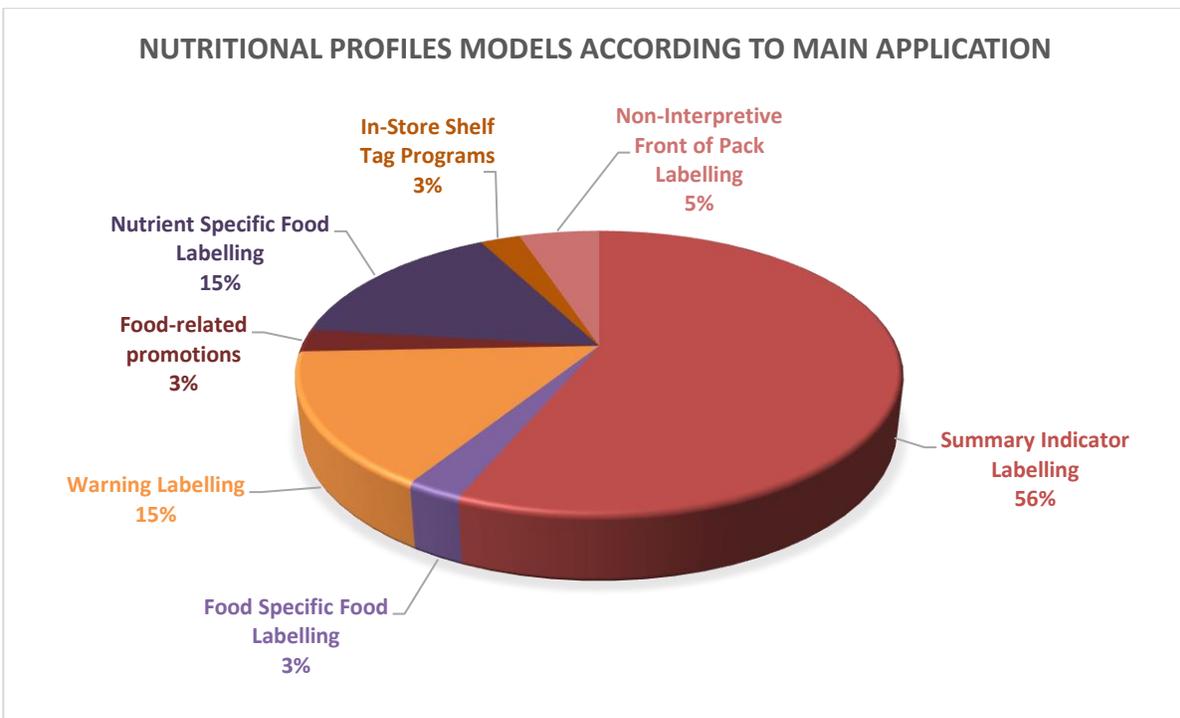
Because the objective of the proposed work is for labelling purposes only, the adjusted database was developed, by Costa Rica and Paraguay taking as a reference the general database; 39 nutrient profiles made for this purpose are released. The database can be accessed by downloading Appendix III at the following link:

http://www.fao.org/fileadmin/user_upload/codexalimentarius/doc/AppendixIII_Database_Adjusted_FINAL_03-09-19.xlsx

The main characteristics of these 39 nutritional profiles are, 19 are elaborated by governmental institutions, 10 by non-governmental organizations, 10 by industry. In addition, 29 (74%), are in force, 2 are discontinued (5%), 3 (8%) did not have available information and 5 (13%) are in process and implementation.

Specific applications were found within the database that have served as the basis for determining the categorization criteria for the wide range of foods according to their nutritional quality. The following chart details the percentage of NPMs taking into account their main application:

Graph No. 3



As illustrated above, one of the most common applications is its use in labelling as a "summary indicator", used in 56% of NPMs. The summary indicator is a graphic, symbol or logo placed on the label that gives food products a general nutritional condition, through the use of algorithms.

At the same time, 15% of the NPMs identified its use as "warning labelling", which is characterized by highlighting certain nutrients such as saturated fat, total sugars or sodium, whose intake has been associated with the development of noncommunicable diseases (NCDs).

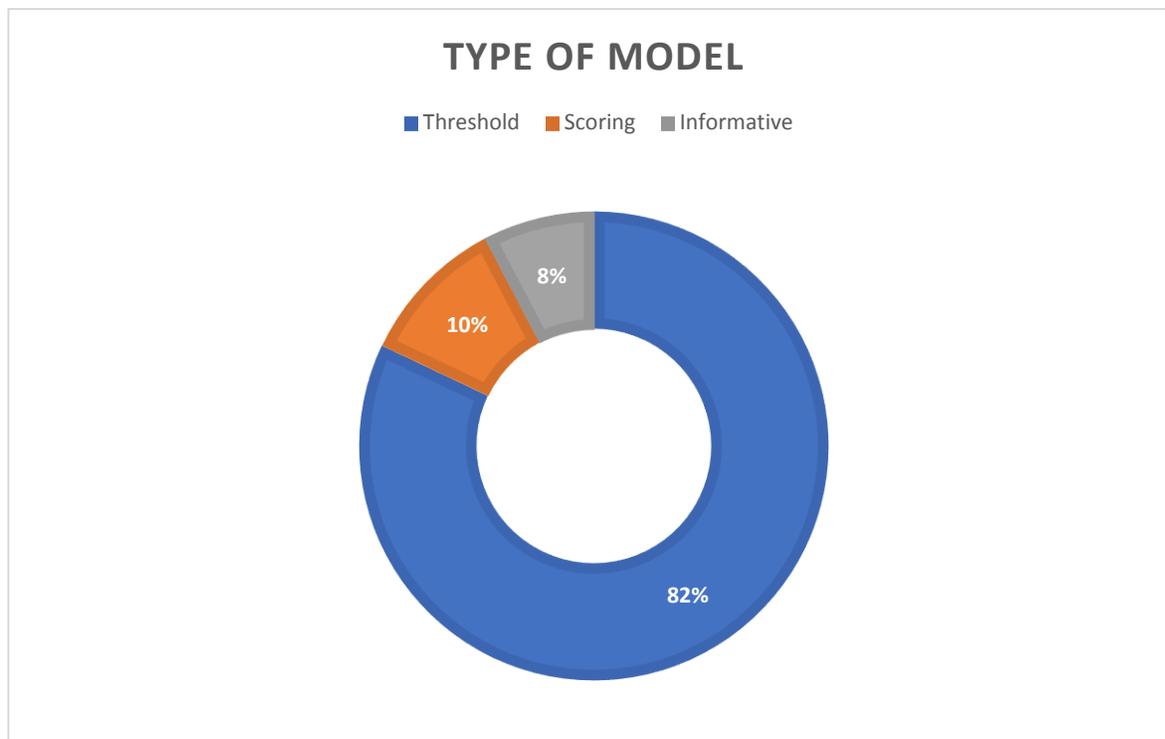
Another frequent use is "nutrient specific food labelling", also used in 15% of NPMs. The nutrients used are generally determined according to their nutritional importance for public health; but unlike warning labelling, in these cases threshold amounts are established that meet a nutrition standard. In this way, foods below the threshold are described as "good nutritional quality" and those above the threshold as "lower nutritional quality".

In addition, a model with “food specific labelling” was observed, in which a group of food (grains, meats and vegetables) stands out. Another model is applied for promotional purposes for children and a third model is used in the shelves of stores and supermarkets.

As part of this inventory, 2 FOPNL systems were included in the “non-interpretive front of pack labelling” category, which represents 5% of the inventory. In this type of labelling, a nutritional profile model is not used as such, but rather the nutrient reference values (NRVs) contained in the nutritional labelling are used. While there was another model that also uses NRVs instead of a nutrient profile, it was classified as “nutrient specific food labelling” because it also had interpretative elements. However, the type of model was categorized as “informative” as it did not have a threshold system or score.

The 39 models assessed in the adjusted database were categorized based on how the model was developed: thresholds⁵, scoring⁶ and informative⁷. In that sense, 32 NPMs (82%) use thresholds, 4 (10%) use a scoring system and 3 (8%) are informative, as detailed in the following graph.

Graph No. 4



Currently, there are no standard recommendations on the contents of each nutrient either at a general level or by food groups. This makes the task of defining a threshold for each specific nutrient very complex. Below is an example of the nutrient thresholds that make up some of the most frequently used profiles.

⁵ A threshold is defined as an individual value for each nutrient that must not be exceeded (maximum threshold value) or that must be reached (minimum threshold value) for a food to obtain a declaration. (Nutrition profiles: Scientific intentionality versus real impact on public health / Fundación Iberoamericana de Nutrición (FINUT) 2016).

⁶ The points are attributed to food, when they meet the criteria of each of the nutrients that are part of the nutritional profile, and these points finally add up to obtain the final score. (Nutrition profiles: Scientific intentionality versus real impact on public health / Fundación Iberoamericana de Nutrición (FINUT) 2016.)

⁷ Informative implies the transfer of some part of all the information considered relevant to the nutrient declaration, without generating any interpretation by the consumer (CX/FL17/44/7).

Table 1. Nutrition profiles intended for to FOPNL with their respective thresholds of nutrients of importance for public health.

Model	Sugars	Sodium	Saturated fat	Fibre	SOURCE
Traffic light	Low: ≤ 5 g /100 g medium: 5.1 – 22.5 g /100 g High: ≥ 22.6 / 100g	*SAL: Low: ≤ 0.3 g /100 g Medium: 0.4 – 1.5 g /100 g High : ≥ 1.6 g / 100g	Low: ≤ 1.5 g /100 g Medium: 1.51 – 5 g /100 g High : ≥ 5.1g / 100g	Does not apply	Food Standards Agency (FSA) https://bit.ly/2EBIz5c
Choices	It is varied according to the food group (6g "Soup" – 60 g "Syrups" /100 g)	It is varied according to the food group (20 mg "Carbonated waters" – 4500 mg "seasoning" /100 g)	It is varied according to the food group (1,5 g "soup" – 35 g "Oil" /100 g)	It is varied according to the food group (2g "Whole grains" – 5 g "Wholemeal flours" /100 g)	Choices International Foundation https://cutt.ly/8iKWFF
Health Star Rating (HSR)	Points are assigned based on grams of sugars per 100 grams of the product	Points are assigned according to milligrams of sugars per 100 grams of the product	Points are assigned based on grams of saturated fat per 100 g of the product	Points are assigned according to the grams of fibre per 100 grams of the product	Nutrient Profiling Scoring Criterion (NPSC)/ by Food Standards Australia New Zealand (FSANZ) https://bit.ly/2ZcJPSY
Black Octogonal Sign "HIGH IN"	High in solids: 10 g/100 g High in Liquids: 5g /100 ml	High in solids: 400 mg/100 g High in Liquids: 100 mg /100 ml	High in Liquids: 4 g/100 g High in Liquids: 3 g /100 ml	Does not apply	Ministry of Health https://bit.ly/2WpjsHB
Ecuador traffic light	Low: ≤ 5 g /100 g Medium: 5.1 -15 g /100 g High: ≥ 15 / 100g	*SAL: Low: ≤ 0.3 g /100 g Medium: 0.31 – 1.5 g /100 g High: ≥ 1.51 / 100g	Does not apply	Does not apply	Ministry of Public Health https://cutt.ly/gixz11
Nutri-Score	Points are assigned according to grams of sugars per 100 grams of the product	Points are assigned according to grams of sodium per 100 grams of the product	Points are assigned based on grams of saturated fat per 100 grams of the product.	Does not apply	UK Ofcom Nutrient Profiling Model/ by Food Standards Agency (FSA) https://bit.ly/2U06gs0
Keyhole	It is varied by food group (1g "Minimally processed foods with fruits" - 13 g "Cereals"/100 g)	It is varied by food group * SALT: (0.3 g "Oatmeal" - 1.6 g "Smoked fish"/100 g)	It is varied by food group : (10 % "Sandwiches" - 33% "Milks" / 100 g)	It is varied by food group : (3 g "Whole grains" - 6 g "Flours" / 100 g)	The National Food Agency, is supported by the Nordic Council of Ministers. https://bit.ly/2Zs5SFB

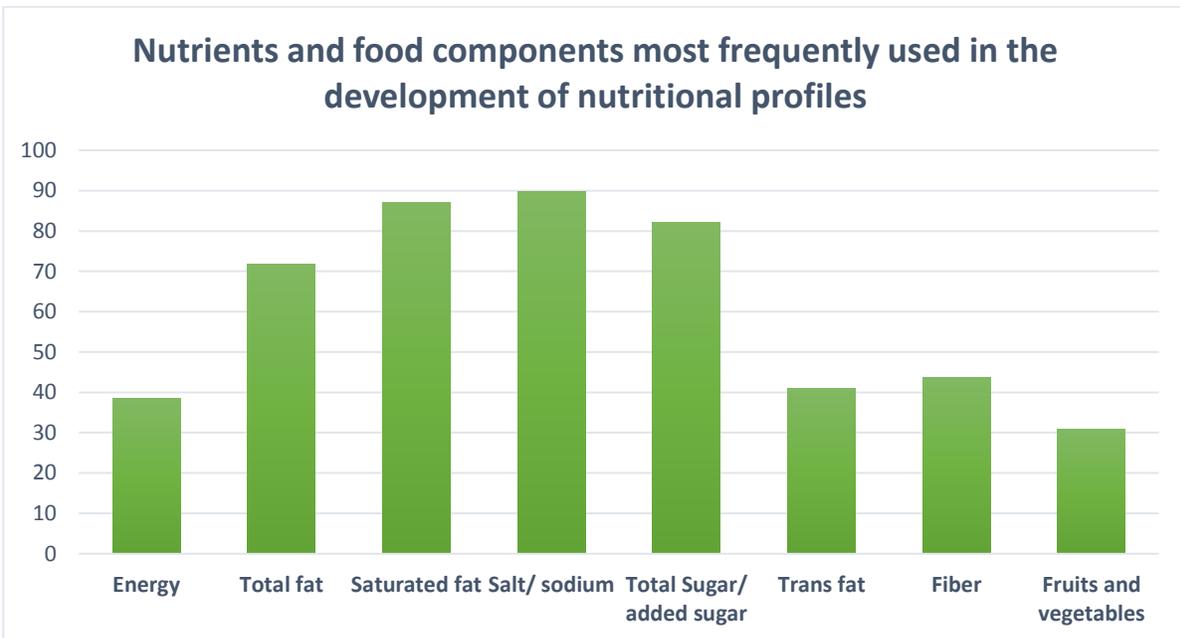
It is worth mentioning that, each NPM has its own characteristics. As the models evaluate a certain food group, some vary the nutrients of public health importance to examine and others always use them. In addition to this, most models determine different thresholds according to food group.

On the other hand, some of the NPMs identified are not based on thresholds, but instead use a system that attributes a score to the food based on its nutritional composition. In this way the nutrients to be limited or considered "unfavorable" subtract points, while the nutrients and components to be incentivized or "favorable" add points. The result defines the final score of each product.

Thus, an indispensable characteristic of NPMs is the inclusion of certain nutrients or food components. In most cases, these models include nutrients to limit, while other models also include essential nutrients or components whose intake should be promoted (for example: fibre, fruits,vegetables, among others).

The following chart shows the most frequently used nutrients and components:

Graph No. 5



3.3 Validation of nutritional profiles.

The validation of a nutrient profile model assesses the degree to which it manages to correctly categorize the different foods; that is, the degree with which the model fully complies with what it has been designed for. The World Health Organization (WHO) defines three main approaches to testing the validity of nutrient profiling models⁶.

1. Content validity: This form of testing involves classifying food products using the nutrient profile model and assessing to what extent, the model may discriminate between products based on their healthy condition.
2. Converged validity: This validation approach seeks to compare the convergence or proximity of the classifications of products obtained, using nutrient profile models that have been designed for similar purposes (e.g. guides food-based diets). This test identifies any apparent anomalies in product classifications, and is the approach used in testing most nutrient profile models to date.
3. Predictive validity: in this type of more advanced test the nutrient profile criteria are applied to the dietary data of the population, and this data are used to compare health risks across better or worse quality population segments according to the nutrient profile criteria.

Once the concepts of validation have been explained, it is noted that, of the 39 profiles mentioned, only 15 have some type of validation or research to evaluate their effectiveness.

Against this background, it can be mentioned that WHO has identified the lack of a definition of healthy food, as a major problem affecting all the above validation methods; this, because both foods and diets high in a certain nutrient (e.g. saturated fatty acids) can be described with an "unhealthy" condition; that is, foods with some "unhealthy" condition would be expected to correlate with unhealthy diets.

For all of the above, it is considered that there is a gap when assessing whether the consumption of relatively large amounts of "healthy" or "unhealthy" foods (as defined by the nutrient profile model) affects or affects in any way the development of chronic non-communicable diseases such as obesity, diabetes and cardiovascular disease.

This is why, it is concluded that, in the findings identified in this inventory, there are tools that justify starting work on a nutritional profile, in order to harmonize basic scientific criteria of any profile that will be used for FOPNL.

4. CONCLUSION

Guidelines for the development of labelling-specific nutrient profiles could be applied globally, facilitating recognition among countries implementing their own profile, while reducing barriers to trade.

Current Codex texts do not provide for general guidelines for the establishment of nutritional profiles for food labelling. Which is why General guidelines for nutritional profiles applicable to food labelling are needed to provide a harmonized international reference in the discussion of emerging regulations on nutrition labelling on the front of the packaging and ensure such labelling is scientifically informed, clear, transparent, non-discriminatory and facilitate global food trade.

Codex has current documents, which can be taken as an important input to initiate the development of general guidelines for establishing nutritional profiles for labelling purposes, such as:

- *CXG 23-1997 Guidelines for Use of Nutrition and Health Claims, "Condition Table for Nutrient Content Property Statements"*: This document contains thresholds for the "LOW" declaration of critical nutrients to limit (fats sodium, sugars), and "SOURCE" of critical nutrients for incentivizing (fibre) in the chart.
- *CXG 2-1985. Guidelines on Nutrition Labelling*: in order to develop additional guidance and facilitate the use of nutritional profiles, taking as a reference the work done by the World Health Organization (WHO) in this area

5. RECOMMENDATION

It is recommended that the CCNFSDU, start new work on Guidelines to establish nutritional profiles (Project document is attached at Appendix I) and establish an electronic working group to undertake this work:

- I. Develop harmonised general guidelines for the establishment of nutritional profiles for use in packaging front labelling systems, in line with the current provisions of Codex and other scientific documents as needed.

APPENDIX I

PROJECT DOCUMENT

GENERAL GUIDELINES FOR THE DEVELOPMENT OF NUTRIENT PROFILES FOR FOOD LABELLING

1. PURPOSE AND REACH OF THE NEW WORK

Establish harmonised and evidence-based general guidelines for the development of nutrient profiles used in labelling systems on the front of the packaging.

2. RELEVANCE AND OPPORTUNITY

The multiple interpretations of the nutritional profiles available today can be confusing, so a systematic comparison of different approaches is necessary, and the establishment of general principles that make it easier for countries and organizations to use any profile that is considered effective, appropriate and scientifically grounded.

This proposal concerns the development of guidelines to guide governments (or other stakeholders) in the application of interpretative nutritional profiles that are used in packaging front labelling systems and food industries to reformulate or develop new foods with a healthier nutritional composition.

On the other hand, the work being carried out by the EWG on "Front of pack nutrition labelling" in the Codex Committee on Food Labelling (CCFL) showed that, increasingly, an increasing number of Codex members implemented nutrition labelling on the front of the container that need to be supported by a validated nutritional profile. However, the *Guidelines on Nutrition Labelling* (CXG 2-1985) do not include criteria on nutrient profiles in the label.

Therefore, and taking into account that Codex Alimentarius is the internationally recognized body of The World Trade Organization in the field of food regulation and has 189 affiliated countries; it is apparent that, for the Organization, it is an opportunity for Codex to ensure that all member states and organizations can evaluate and discuss methodologies developed to establish existing and recommended nutritional profiles and, in this way, obtain global harmonization to help protect public health and in turn remove barriers to trade generated by the diversity of existing methodologies; in accordance with the legitimate objectives of Codex's action.

3. MAIN ASPECTS TO BE COVERED

The *Guidelines on Nutrition Labelling* (CXG 2-1985), in Section 5, allow the use of complementary nutritional information, however; greater clarity is needed, so the proposed work seeks to strengthen and establish additional guidelines that may include general principles for the development of nutritional profiles.

The proposal is to develop guidelines that may or may not be included in the *Guidelines on Nutrition Labelling* (CXG 2-1985). The decision on their location will be made once they have been developed.

Next steps for the proposed new work could be to identify and discuss:

- Components to be included in a nutritional profile model (e.g. nutrients, food groups, both).
- Scientific evidence associated with either positive or negative public health outcomes associated with those components (e.g. dietary guidelines, reports from authoritative recognized scientific bodies).
- Recommended public health ranges or thresholds for those components based on public health outcomes.
- Approaches to translating identified ranges or thresholds and applying them to individual foods or food categories to establish nutritional profile models.
- Develop a consensus definition of "nutrients profiles" and all those definitions necessary to establish nutrient profiles.
- Review the " Guidelines on Nutrition Labelling (CAC / GL 2-1985)" in order to develop additional guidance and facilitate the use of nutritional profiles.

4. EVALUATION WITH RESPECT TO THE CRITERIA FOR THE ESTABLISHMENT OF NEW WORKING PRIORITIES

General criterion

Simplified nutritional information linked to the nutritional profile can provide consumers with a better understanding of the nutritional composition of foods, as well as promote a balanced and healthy diet and a conscious consumption. It can also cause food manufacturers to reformulate their food products to improve the nutritional quality of the foods they offer to consumers. Improving people's nutrition by providing healthier choices would improve the risk profile of noncommunicable diseases around the world, along with other initiatives that could ensure improvements in consumers' healthy lifestyles (educational campaigns on better nutrition and physical activity).

Criteria applicable to general matters

(a) Diversification of national legislations and apparent resultant or potential impediments to international trade

Several countries have adopted or are planning simplified nutrition labelling systems that use nutritional profiles, either voluntarily or mandatory. With the increased implementation of these systems around the world, harmonization of guidelines at the global level is important to minimize barriers to trade.

(b) Scope of work and establishment of priorities between the various sections of the work

Review Codex texts, including the Nutrition Labelling Guidelines (CXG 2-1985), to draft guidance on the use of nutritional profiles.

(c) Work already undertaken by other international organizations in this field and/or suggested by the international intergovernmental body(s)

Report: "Nutrient Profile Report of a WHO/International Association for the Study of Obesity (IASO) technical meeting" (United Kingdom, 4-6 October 2010). Published in 2011.

(d) Amenability of the subject if the proposal to standardization

Nutritional profiles are an input for the implementation of labelling systems, so the purpose of the new work proposal is to revise existing texts for the development of guidelines to support the use of profiles nutrition products, either in the current guidelines or in a separate document.

(e) Consideration of the global magnitude of the problem or issue

Recognizing the burden and threat posed by non-communicable diseases to public health, promoting healthier diets for consumers, and encouraging manufacturers to improve the nutritional quality of food supplies are areas where an appropriate guidance could have a significant impact globally, which is why simplified nutritional information on food packaging is an issue of global interest.

5. RELEVANCE FOR CODEX STRATEGIC OBJECTIVES

The proposed work is in line with the Mandate of the Commission for the Development of International Standards, Guidelines and Other Recommendations to protect consumer health and ensure fair practices in food trade. The new work proposal will contribute to the progress of Strategic Goals 1 and 4, as described below.

Strategic Objective 1: Address current, emerging and critical issues in a timely manner

Objective 1.1 Identify needs and emerging issues.

Objective 1.2 Prioritize needs and emerging issues.

The use of nutritional profiles as part of simplified nutritional labelling on the packaging front is of increasing interest and activity in several countries worldwide. There is currently no global guideline on best practices regarding the establishment of these profiles on a scientific basis.

Providing guidance to countries wishing to make use of nutritional profiles on frontal nutrition labelling would help achieve a global basic level of harmonization on the subject.

Strategic Objective 2: Develop standards based on science and Codex risk-analysis principles

Strategic Objective 2.1 Use scientific advice consistently in line with Codex risk-analysis principles.

Bringing this issue to the CCNFSDU will allow all members who have an interest in nutritional profiles to participate in the discussions.

6. RELATIONSHIP BETWEEN PROPOSAL AND OTHER EXISTING CODEX DOCUMENTS

The proposal relates to the *Guidelines on Nutrition Labelling* (CXG 2-1985) and these guidelines are applicable horizontally in all pre-packaged foods.

7. REQUIREMENT AND AVAILABILITY OF SCIENTIFIC ADVICE

None identified at this stage. There will be an opportunity to consult the relevant bodies throughout the process if necessary.

8. NEED FOR TECHNICAL SUPPORT BY EXTERNAL ORGANIZATIONS?

None identified at this stage.

9. PROPOSAL TIMELINE

Subject to the Commission's approval in 2020, the preparation of the Guidelines will be submitted for consideration by the CCNFSDU⁴² in 2020 and is expected to take four sessions of the CCNFSDU or less, according to relevant inputs and the agreement of the members. The Commission's final adoption is scheduled for 2024.