

THAI UNION NUTRITION GUIDELINE (TUNG)



Thai Union



seachANGE
2030

NUTRITION AND HEALTH



Preface

In today's world, the prevalence of non-communicable diseases (NCDs) poses a significant public health challenge, impacting individuals worldwide across all demographics. NCDs represent a pressing concern for global well-being. As the world seafood leader, Thai Union Group PCL is committed to addressing this challenge through SeaChange® 2030, our sustainability strategy launched in 2023. Driven by a profound dedication to societal well-being, it is our imperative to guide consumers toward healthier dietary choices that resonate with global nutrition objectives and the United Nations Sustainable Development Goals (SDGs), notably SDG 3, focused on NCD prevention.

Underpinning our ethos of "Healthy Living," our ambient branded products strictly adhere to the Thai Union Nutrition Guidelines (TUNG), aligned with leading international standards, including those of the World Health Organization (WHO). We place the health and well-being of our communities at the heart of our innovation, ensuring that 100% of our ambient branded products meet our nutritional guidelines. Furthermore, every new ambient branded product we develop will be designed to deliver positive nutrition—supporting healthier choices and enhancing overall wellness.

"At Thai Union, we view SeaChange® as our license to operate," said Thiraphong Chansiri, President & CEO of Thai Union. "We believe it is important to treat the resources we rely upon responsibly, so we can nourish people and provide work in communities all over the globe for generations to come. Our vision is to be the world's most trusted seafood leader and SeaChange® 2030 helps us get there. The changes we will achieve through this strategy are crucial – not just for Thai Union, but for the good of us all."



**Mr. Thiraphong Chansiri
President & CEO**



"The seafood industry needs to do more when it comes to caring for our people, our planet and our oceans," said Adam Brennan, Chief Sustainability Officer at Thai Union. "The time for aggressive action is now. Through SeaChange®, we aim to drive meaningful improvements across the entire global seafood industry. Commitments to this ambition require the power and collaboration of communities, governments, and organizations that can help make long overdue structural changes a reality. Together with our partners, we're asking the wider industry and our peers to join this effort."

**Mr. Adam Brennan
Group Director, Sustainability**

Thai Union Nutrition Guideline (TUNG)

Introduction

Non-communicable diseases (NCDs) are on the rise globally and present a significant public health challenge. They impact individuals of all ages and regions, driven by factors such as unhealthy diets, physical inactivity, tobacco use, environmental pollution, and alcohol consumption. Data from the World Health Organization (WHO) indicates that NCDs are responsible for 41 million deaths annually, accounting for 74% of deaths globally. Alarmingly, 86% of these premature NCD deaths occur in low- and middle-income countries, with 17 million people dying from NCDs before the age of 70 each year.

Modifiable behavioral factors such as tobacco use, physical inactivity, unhealthy diets, and excessive alcohol consumption are the primary drivers of most non-communicable diseases. These factors contribute to metabolic changes such as obesity, elevated blood sugar, and higher cholesterol levels, which increase the risk of NCDs. Unhealthy diets high in calories, fat, sugar, and salt, are major contributors to NCDs by causing weight gain and related health issues. Poor-quality diets are a top 6 risk factor for global disease burden, linked to low intake of fruit and vegetables, nuts/seeds, whole grains, omega-3 fatty acids, and high sodium. Promoting healthy diets is a crucial strategy to combat NCDs. Consuming a healthy diet

• Key takeaway •

Non-communicable diseases (NCDs) are a significant global health challenge, primarily driven by modifiable risk factors like unhealthy diets. Thai Union Group PCL (TU) is committed to promoting health and wellness through its sustainability strategy, Seachange® 2030, by encouraging the consumption of safe and nutritious seafood products. The Thai Union Nutrition Guideline (TUNG) aims to improve product portfolios, enhance nutritional profiles, and promote healthy consumption patterns to reduce the burden of NCDs worldwide.

throughout life helps to prevent malnutrition in all its forms as well as a range of NCDs and conditions.

Thai Union Group PCL (TU), a global leader in the seafood industry, upholds a commitment to promote health and wellness through Seachange® 2030, its global sustainability strategy launched in 2023, with the aspiration to cultivate a healthy diet through sustainable seafood to ensure the well-being of future generations. Given the dedication to contribute to the overall well-being of society, it becomes imperative for TU to guide consumers toward healthier dietary choices that align with global nutrition targets and the United Nations Sustainable Development Goals (SDGs), particularly SDG 3, which focuses on preventing diseases like NCDs.

The Thai Union Nutrition Guideline (TUNG) is set in harmony with international dietary guidelines and nutrient recommendations from expert authorities such as WHO, EFSA, CODEX, and others. It is a set of nutrition guidelines intentionally developed to establish a standard for TU's ambient branded products portfolio, driving toward healthier product offerings which contribute to the positive health and well-being of the consumers. TUNG aims to benefit both consumers and TU's business. Specifically, it will:

- Reaffirm TU's commitment to 'Healthy Living, Healthy Oceans' through Seachange® 2030.
- Serve as a fundamental internal nutrition guideline to guide and support the development of TU's product portfolio, with an aim to improve nutritional profiles, and promote the health and well-being of consumers.
- Provide the foundation for optimizing and enhancing nutritional composition as well as incorporating premium features into a new generation of products.
- Promote healthy consumption patterns and, whenever possible, improve consumer communication to encourage healthier choices.
- Contribute to the positive transformation of the food supply, leading to enhanced dietary intakes and a reduced risk of NCDs in the global population.

Foundation Principles of TUNG

Guided by a strong commitment to Nutrition and Health as part of SeaChange® 2030, all TU's ambient branded products will strictly adhere to TUNG, which is in line with those recommended by international bodies including WHO. To guide TU's ambient branded products transformation towards a healthier profile, TUNG features two sets of nutrients: those to be limited and those to promote. The nutrients to limit include energy, saturated fat, sodium, and added sugars based on public health concerns. The two nutrients to promote are those that contribute to health and wellness but not limit to protein and omega-3 fatty acids.

All TU's ambient branded products are classified based on their roles in a balanced diet whether they are consumed as a large- or small-meal or smaller components (i.e., center of plate, side dishes, small meals, occasional) and the ingredients contained in the products.

Given these considerations, TU's ambient branded products are classified into five product categories, namely

- 1) Products with packing media
- 2) Products with flavor and seasoning
- 3) Products with sauce and curry
- 4) Small meal/ RTE (Ready-to-Eat)
- 5) Spread / Topping

Nutrients to limit	Nutrients to promote
Due to public health concerns	To support health and wellness according to the nutritive value
<ul style="list-style-type: none"> • Energy • Saturated fats • Trans fats • Sodium • Added sugar 	<ul style="list-style-type: none"> • Protein • Omega 3 fatty acids

Two groups of the nutrients in focus under TUNG

Product definition and TUNG product scope

TUNG is a set of nutrition guidelines intentionally developed to establish a standard for TU's product portfolio, driving toward healthier product offerings which contribute to the positive health and well-being of consumers. All of TU's ambient branded products, composed of shelf-stable items sold to consumers through retail channels and wholesalers, are the first category to be prioritized. In general, TU's ambient branded products include varieties of processed fish. The key fish species include tuna, sardine, salmon, mackerel, and herring. These ambient products are categorized by product characteristics in a balanced diet and their definitions are indicated as follows:

Product categories	Definition
Marine Fishes	
Products with packing media 	Refers to shelf-stable canned, potted, cupped, retort pouch, or glass jar items containing processed fish flesh, such as loin, chunks, steaks, fillets, flakes, and shredded from various marine species, including tuna, sardine, salmon, mackerel, and herring. These products are packed with media such as water, olive oil, any edible vegetable oil (other than olive oil), or a mixture of such oils.
Products with flavor and seasoning 	Refers to shelf-stable canned, potted, cupped, retort pouch, or glass jar items containing processed fish flesh, such as loin, chunks, steaks, fillets, flakes, and shredded from various marine species, including tuna, sardine, salmon, mackerel, and herring. These products are packed with a packing medium and seasoned or flavored by adding either natural ingredients (e.g., spices, herbs, etc.) or artificial ingredients.



Product categories	Definition
Products with sauce and curry	Refers to shelf-stable canned, potted, cupped, or retort pouch items containing processed fish flesh, such as loin, chunks, steaks, fillets, flakes, and shredded from various marine species, including tuna, sardine, salmon, mackerel, and herring. These products are infused with sauces such as tomato sauce, chili sauce, sweet chili sauce, BBQ sauce, mustard, curry, etc.
	
Small meal or Ready-to-Eat (RTE)	Refers to shelf-stable canned, potted, cupped, retort pouch, bowl, or aluminum tray products containing processed fish flesh, such as loin, chunks, steaks, fillets, flakes, and shredded from various marine species, including tuna, sardine, salmon, mackerel, and herring. These products are designed to be served as multi-ingredient small meals containing, for example, rice, legumes, vegetables, herbs, condiments etc., providing up to 20% of the total energy intake.
	
Spread/ Topper	Refers to shelf-stable canned, potted, cupped, or retort pouch products containing processed fish flesh, such as loin, chunks, steaks, fillets, flakes, and shredded from various marine species, including tuna, sardine, salmon, mackerel, and herring. These products typically serve as a type of condiment, added in small amounts to complement other foods. They are often consumed between main meals or as a very small meal. They contain multiple ingredients such as dressing, sauce, or other condiments with an intention to be placed on top of foods such as rice, bread, toast, and crackers. The purpose is to enhance the flavor and texture of the base food, which may be considered bland without it, and to make it more visually appealing
	
Other Marine Species	
Products with packing media	Refers to shelf-stable canned, potted, cupped, retort pouch, or glass jar items containing other marine fish processed such as crab, squid, oyster, and clams. These products are packed with media such as water, brine, olive oil, any edible vegetable oil (other than olive oil), or a mixture of such oils.
	

The nutrient targets under TUNG and the references used in its setting

TUNG is set in alignment with international dietary guidelines and nutrient recommendations from the following expert authorities and scientific evidence:

- The recommended nutrient intakes by WHO/FAO (2003), EFSA (2019; 2017; 2010), and/or CODEX (2021).
- International food-based dietary guidelines e.g. U.S. Department of Agriculture & U.S. Department of Health and Human Services (2020), Choice International Foundation (2019-4).
- Scientific evidence on nutritional values and functional benefits of healthy consumption patterns featuring seafood and related products (WHO, 2024; FAO, 2010; Mozaffarian *et al.*, 2006).
- Allocation of nutrients according to product proposition for consumption as part of a meal (Food Standards Agency, 2007).
- Requirement of certain nutrients to achieve product stability and food safety e.g. the level of sodium for prevention of microbial growth (Rybicka *et al.*, 2022; U.S. Department of Health and Human Services, 2022).
- Consumer acceptability of products that meet the criteria without compromising the taste.

Nutrients	International recommendation	References
Nutrients to limit		
Energy	2,000 kcal/day	FAO/WHO. Joint FAO /WHO /UNU Expert Consultation. Human Energy Require; FAO: Rome, Italy, 2001.
Saturated fat	< 10% of energy intake	Codex Guideline on Nutrition Labelling (CXG 2-1985)
Trans fat	≤ 1% of energy	WHO/FAO Expert Consultation on Diet, Nutrition and the Prevention of Chronic Diseases (2002: Geneva, Switzerland)
Sodium	≤ 2,000 mg/day	WHO Guideline: Sodium intake for adults and children; WHO: Geneva, Switzerland, 2012. Codex Guidelines on Nutrition Labelling (CAC/GL 2-1985) EFSA: Dietary reference values for sodium, 2019.
Added sugars	< 5% of energy intake at maximum	WHO. Guideline: Sugars intake for adults and children.; WHO: Geneva, Zwtserland,2015.
Nutrients to promote		
Protein*	Able to claim on pack	WHO. Guideline: Diet nutrition and the prevention of chronic diseases; WHO: Geneva Switzerland. 2003.
Omega-3 fatty acids		FAO/Globefish/Fishery-information

*TU, as the seafood industrial leader, we recognize that tuna and other marine fishes are excellent sources of protein and omega-3 fatty acids. We want to classify and encourage these nutrients as "nutrient to promote."

Application and the use of TUNG

TUNG represents an internal control policy aimed to assist the Product Development team in formulating and developing products that enhance the nutritional profile of TU's ambient branded products to promote health and well-being. It serves as the fundamental strategy for nutrition transformation across all of TU's ambient branded product lines. It also provides the framework for supplementary nutrition information on packaging, including nutrient declarations on the nutrition label, Front-of-Pack Labeling (FOPL), and claims, as well as marketing communications that are based on scientific evidences and comply with regulations, aiming to support and encourage consumers in making healthier choices.

Products already compliant with TUNG, meeting criteria for nutrients that limit energy, saturated fat, trans fat, sodium, and added sugar, are classified as "Good

(Meet TUNG)" and require no further action. Those not in compliance are encouraged to seek further improvements. Additionally, those that meet regulatory criteria for nutrients to promote, such as protein and omega-3, can utilize front-of-pack (FOP) claims to enhance brand image and competitive advantage. Implementing TUNG internally has embarked stepwise and integrated product and portfolio management approach, including product innovation and renovation, aiming not only to improve nutritional profiles in line with international recommendations without compromising product taste and consumer preferences, but also enhance both the nutritional quality and transparency of our products. The ultimate aim of TUNG is to establish TU's ambient branded products as healthier options, recognized by authorized certified bodies, such as Nutri-Score for the EU and Healthier Choice for Thailand.



Figure 1: TUNG is a fundamental building block for a nutrition transformational journey

The nutrient targets set under TUNG for all of TU's ambient branded products are intentionally designed to support the SeaChange® commitment on health and nutrition by 2030. These targets will be re-evaluated and potentially adjusted whenever there are any new knowledge or emerging recommendations concerning nutrients related to public health concerns to ensure their alignment in promoting health effectively for ultimate benefits of healthier health and well-being of our consumers.

Aligning TUNG with Appropriate Serving Sizes and Protein Accessibility to Promote Healthier Lives

TUNG plays a critical role in evaluating the healthfulness of Thai Union's ambient branded products by analyzing their nutrient composition—particularly nutrients to limit. It serves as a practical tool to guide product improvements, support healthier food choices, and encourage better eating habits.

A clear understanding of nutritional profiles helps define appropriate serving sizes in line with dietary guidelines, which can prevent overconsumption. For instance, products high in saturated fat may require smaller serving recommendations compared to those that are nutrient-dense and low in fat.

However, clearly defined nutrition guidelines and serving sizes alone are not enough. Their effectiveness depends

on the affordability and accessibility of healthy products. When nutritious, high-quality protein is within reach—both financially and geographically—consumers are empowered to make healthier choices more consistently.

As part of our ongoing commitment, Thai Union actively promotes responsible consumption by aligning serving sizes with national dietary recommendations across the markets we serve. Furthermore, we place a strong emphasis on ensuring that our ambient branded products are accessible and affordable, particularly for underserved and at-risk populations. By doing so, we aim to support public health, promote well-being, and contribute to reducing social inequalities worldwide.

Serving size to limit excess consumption for the TU ambient branded products

There is growing evidence that the portion sizes of many foods are a contributing factor to the rise in obesity (Young & Nestle, as cited in IOM, 2010; Benton, 2003). Being mindful of portion sizes is essential, as consuming excessive or insufficient amounts of any type of food can contribute to health risks. This occurs when the body receives either an excess or a deficiency of the nutrients it requires to maintain overall health and proper functioning (BDA). Research by Nielsen and Popkin (2003) provides clear support for this, demonstrating a link between increased portion sizes and rising obesity rates. Their study found that high-calorie foods accounted for 18% of total energy intake in 1977-1978, which increased to 27.7% by 1994-1996. Over this period, portion sizes for nearly all of these foods grew, leading to higher caloric intake per eating occasion and contributing to the increasing prevalence of obesity (Nielsen & Popkin, 2003 as cited in Benton, 2015).

An important aspect of healthy eating involves selecting suitable quantities of various foods. Although the terms 'portion size' and 'serving size' are often used interchangeably. But they have different meanings in nutrition guidelines (Ellis, 2018). A portion size is the amount of food an individual decides to eat at a particular time,

whether as part of a meal or a snack. The size of a portion is determined by personal choice and can vary from one occasion to another. On the other hand, a serving size, sometimes referred to as a standard portion size, is a precise, standardized amount of food established for labeling and dietary reference purposes. Serving sizes are typically measured in familiar units appropriate to the type of food, such as cups, tablespoons, grams, slices, or pieces. These measurements are used on Nutrition Facts labels to provide consistent information about the nutritional content of food based on that specific serving (AHA, 2023; Valdez, 2022; Ellis, 2018). It is essential to understand the distinction between a portion and a serving size. While serving sizes remain constant as a standardized measure for nutrition labeling, portion sizes are flexible and based on individual preference. Additionally, although a serving size reflects what people typically eat, it does not imply a recommended amount for consumption during a single eating occasion (Valdez, 2022).

In the United States, serving sizes are legally required to be based on the amounts of food people typically

consume, rather than the quantities they should consume. Serving sizes reflect the amount people generally eat and drink (USFDA, 2024). Since the 1990s, food packaging has included serving size information on the Nutrition Facts label. However, in 2016, the Food and Drug Administration (FDA) revised these serving sizes for the first time in 20 years to better align with actual consumption

patterns. As a result, under current regulations, serving sizes must represent the amounts typically eaten at a single eating occasion rather than suggested serving recommendations (Valdez, 2022).

The term RACC, or Reference Amount Customarily Consumed, refers to a standardized quantity of food or beverage typically consumed per eating occasion.

According to 21 CFR 101.12(b), regulations establish RACCs for specific product categories, which manufacturers must use to determine the appropriate serving size listed on product labels (USFDA, 2025). These RACCs are divided into two tables: one for infants and young children aged 1 to 3 years, and another for the general population aged 4 years and older.

The reference amount for the 'fish, shellfish, or game meat, canned' category is set at 85 grams. Products in this category include canned tuna, canned shrimp, canned clams, canned salmon, gefilte fish, and other canned fish, shellfish, and game meat products, excluding smoked or pickled varieties (USFDA, 2025). For practical purposes, if a product's package size is close to the RACC, it is often reasonable to use the RACC as the serving size. However, if the package size differs significantly from the RACC, adjustments may be

necessary. The adjustment should be based on consumption patterns. The serving size should reflect a realistic quantity that consumers are likely to eat, ensuring that the nutritional information is both useful and honest.

According to 21 CFR 101.9(b) (6), if the total amount inside a package is less than or equal to 200% of the RACC, it is considered as a single-serving container, indicating that it is reasonable for an individual to consume the entire package in one sitting. The FDA also permits certain products containing up to 300% of the RACC to be treated similarly if it is reasonable for an individual to consume the entire package at once. In such cases, the product must feature dual-column labeling, showing nutrition facts for both a single serving and the entire container (USFDA, 2025).

All TU ambient branded products marketed under Chicken of the Sea and Genova brands meet the RACC serving size for canned fish and follow the criteria for single-serving packages.

The following are examples of serving size determined on the Nutrition Facts of products under Chicken of the Sea and Genova brands.

1. Chicken of the Sea, Infusion wild caught tuna, Thai Chilli

<https://chickenofthesea.com/products/tuna/infusions-thai-chili-tuna/>



Nutrition Facts		Amount/serving	% DV	Amount/serving	% DV	Amount/serving	% DV
Total Fat 0g	0%	Monounsat. Fat 0g		Dietary Fiber 0g	0%		
Saturated Fat 0g	0%	Cholesterol 30mg	10%	Total Sugars 2g			
Trans Fat 0g		Sodium 555mg	15%	Int. 2g of Added Sugar 4%			
Polyunsat. Fat 0g		Total Carb 2g	1%	Protein 16g	29%		
Calories per serving	80	Vitamin D 10mcg 6% • Calcium 8mg 0% • Iron 0.5mg 2% • Potassium 235mg 6%					
		The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.					

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2. Chicken of the Sea, Albacore Premium Tuna in water

<https://chickenofthesea.com/products/tuna/chunk-white-albacore-tuna-in-water/>



Nutrition Facts

Servings: 1, Serv. size: 1 can drained (113g),

Amount per serving: **Calories 100**, Total Fat 1g (1% DV), Sat. Fat 0g (0% DV), Trans Fat 0g, Polyunsat. Fat 0g, Monounsat. Fat 0g, **Cholest.** 40mg (13% DV), **Sodium** 280mg (12% DV), **Total Carb.** 0g (0% DV), Fiber 0g (0% DV), Total Sugars 0g (Incl. 0g Added Sugars, 0% DV), **Protein** 20g (36% DV), Vit. D (6% DV), Calcium (0% DV), Iron (6% DV), Potas. (4% DV).

3. Chicken of the Sea, Wild Caught Alaskan Pink Salmon, in water

<https://chickenofthesea.com/products/salmon/wild-caught-alaskan-pink-salmon-skinless-boneless/>



4. Chicken of the Sea, Wild caught Light tuna, in Spring water

<https://chickenofthesea.com/products/tuna/wild-caught-light-tuna-in-spring-water-packet/>



5. Genova, Yellowfin tuna, in Olive oil

<https://www.genovaseafood.com/products/premium-yellowfin-tuna-in-olive-oil/>



Nutrition Facts

Servings: 1, Serv. size: 1 can drained (113g),

Amount per serving: **Calories 210**, Total Fat 11g (14% DV), Sat. Fat 2g (9% DV), Trans Fat 0g, Polyunsat. Fat 1.5g, Monounsat. Fat 7g, **Cholest.** 45mg (16% DV), **Sodium** 500mg (22% DV), **Total Carb.** 0g (0% DV), Fiber 0g (0% DV), Total Sugars 0g (Incl. 0g Added Sugars, 0% DV), **Protein** 29g (52% DV), Vit. D (8% DV), Calcium (0% DV), Iron (4% DV), Potas. (8% DV).

6. Genova, Yellowfin tuna, in Extra virgin olive oil

<https://www.genovaseafood.com/products/premium-yellowfin-tuna-in-extra-virgin-olive-oil-packet/>



In Europe, according to Section 3, Nutrition Declaration, Article 32 of Regulation (EU) No 1169/2011 of the European Parliament and of the Council, the energy value and the amounts of nutrients, including vitamins and minerals referred to in Article 30(1) to (5), must be expressed per 100 g or per 100 ml. Additionally, food manufacturers are permitted to provide nutrition information per portion or per consumption unit, provided that this information is presented alongside the mandatory values per 100 g or per 100 ml. This ensures that consumers can compare products on a standardized basis while also understanding the nutritional content per portion or serving (European Commission, 2011).

An exception applies in specific cases covered under Article 32(4), where a nutrition declaration is provided voluntarily. In these cases, nutrition information per portion or per consumption unit may be presented either alongside or instead of the per 100 g or per 100 ml values (European Commission, 2011).

In all cases, when providing nutrition information per portion or per consumption unit, the portion size or consumption unit must be clearly stated on the label, and the total number of portions or units contained in the package must be indicated (European Commission, 2011).

All TU ambient branded products marketed in Europe e.g., John West, Petit Navire, Mareblu, Parmentier, RügenFisch brands, etc. follow the guidelines as set by the official regulations.

The following are examples of serving size determined on the Nutrition Facts of products under John West, Petit Navire, Mareblu, Parmentier and RügenFisch brands.

1. John West, Fridge pot, Tuna Steak with a little spring water

<https://www.john-west.co.uk/product/no-drain-fridge-pot-tuna-steak-in-spring-water/>



2. Petit Navire Natural Whole Tuna

<https://petitnavire.fr/fr/produit/thon-au-naturel-demarche-responsable>



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3. Mareblu, Light Specialties with Steamed Tuna – Ortolana

<https://www.mareblu.it/prodotti/le-specialita-leggere-insalata-con-tonno-al-vapore-ortolana>



4. Mareblu, Tonno all'Olio di Oliva (Tuna in Olive Oil)

<https://www.mareblu.it/prodotti/tonno-allolio-doliva>



5. Parmentier, Sardines in Extra Virgin Olive Oil

<https://sardinerieparmentier.fr/fr/produit/sardines-huile-dolive-vierge-extra>



6. RügenFisch, Smoked Mackerel in Natural Juices

<https://www.ruegenfisch.de/produkte/makrelenfilets-geraeuchert-in-pflanzenoel-und-eigenem-saft/>



In Thailand, a serving size, or the amount consumed per serving, refers to the quantity of food that an average Thai consumer typically eats in a single eating occasion. The declared amount on the product label reflects the portion the manufacturer recommends consuming at one time, also known as the "amount consumed per occasion." A product's serving size can be determined by referring to the reference serving size, which represents the typical amount of food (by weight or volume) consumed in one sitting and is guided by official regulations. Although the declared serving size may not exactly match the reference serving size, it must remain comparable to the prescribed value as set by the official regulations.

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According to Annex 2 of the Notification of the Ministry of Public Health (No. 445) B.E. 2566 (2023), issued under the Food Act B.E. 2522 (1979) regarding nutrition labelling, the reference serving sizes for food products are organized into 14 categories based on either product characteristics or typical consumption patterns. This classification follows the findings from Thailand's 2016 Food Consumption Data Survey, conducted by the National Bureau of Agricultural Commodity and Food Standards, along with the USFDA's Guidelines for Establishing Reference Serving Sizes (Ministry of Public Health, 2023). Meat, fish, other aquatic animals, eggs, and their products fall under the category 9.1, which covers products packed in cans, bottles, aluminum foil, or retort pouches. There are five sub-categories within this category, classified according to packaging media and specific processing methods.

TU follows the reference serving sizes established by official regulations, including: 55 grams for meat, fish, and other aquatic animals in water, oil, or brine (liquid excluded); 85 grams for those in sauce, e.g., sardines in tomato sauce; 20 grams for edible skin, dried and fried; and 85 grams for those fried with sauce.

The following are examples of serving size determined on the Nutrition Facts of products under Sealect brand:

1. Seialect, Tuna Steak in soybean oil: <https://www.seialect.co.th/product-detail.php?id=4>



2. Seialect, Tuna Sandwich in brine: <https://www.seialect.co.th/product-detail.php?id=6>



3. Sealect, Green Curry Tuna: <https://www.sealect.co.th/product-detail.php?id=10>





4. Seialect, Namprik Tuna: <https://www.seialect.co.th/product-detail.php?id=40>



5. Seialect, Fried Sardine in sweet chili sauce: <https://www.seialect.co.th/product-detail.php?id=22>



Advancing Global Nutrition through Affordable, High-Quality Protein

At Thai Union Group (TUG), our commitment to advancing a healthier world is a cornerstone of our sustainability strategy. We prioritize the **affordability and accessibility of nutritious, high-quality protein**, recognizing that good nutrition is not only essential for individual health and well-being—but also a powerful catalyst for reducing social inequality and enhancing community resilience.

Our actions directly support the United Nations Sustainable Development Goals:

- **SDG 2: Zero Hunger**, by improving access to safe, nutritious, and sufficient food, particularly for vulnerable and underserved communities; and
- **SDG 3: Good Health and Well-Being**, by promoting balanced diets and helping prevent nutrition-related diseases across all life stages.

Seafood as a Vital Source of Global Nutrition

Seafood, especially marine fish, plays a crucial role in global nutrition. It provides **complete, easily digestible protein**, rich in essential amino acids. It also offers a unique nutritional profile—including key vitamins and minerals like A, B, D, calcium, iodine, zinc, iron, and selenium—especially when consumed whole. Low in saturated fat and high in omega-3 fatty acids such as **DHA and EPA**, seafood is a recommended, health-supporting alternative to many other protein sources.

Empowering Nutrition Access Through Product Innovation and Inclusion

Recognizing protein's essential role in nourishing a growing global population, Thai Union is committed to delivering **affordable, nutritious seafood** that meets diverse dietary needs. In a world increasingly challenged by population growth, food insecurity, and widening economic disparities, we believe that **making protein accessible is vital to public health** and long-term social progress.

Our **diverse seafood portfolio** is designed to support balanced diets while removing barriers to essential nutrition. Through our global reach, community-level initiatives, and strategic R&D investment-focus on improving nutrition and enhancing the affordability and accessibility of healthy products, we aim to create **a lasting, positive impact**-uplifting lives, strengthening health systems, and supporting a more equitable and sustainable future for all.

Delivering Healthy Seafood to All

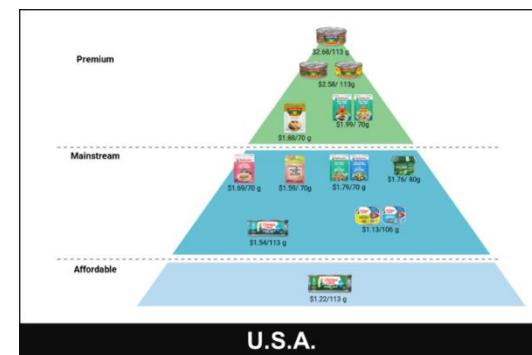
TUG's brands bring healthy, nutritious seafood to **millions of consumers worldwide**, aligned with our vision to become the world's leading marine health and nutrition company. We embed **health, well-being, and responsible business conduct** at the core of our operations—ensuring that our products remain both **affordable and widely available**.

To serve consumers across **all socioeconomic segments**, our product portfolio is carefully segmented into **Premium/Mass Premium, Mainstream, and Affordable** tiers. This strategic pricing structure ensures that consumers—

from Thailand to Europe to the United States—can access high-quality seafood at price points tailored to local economic contexts. For example, in Thailand, product options range from premium offerings above 100 THB to highly affordable choices from just 18 THB.

By offering a complete range of choices across markets, we **empower consumers with flexible, nutritious options**—supporting their health while advancing our broader mission to deliver sustainable value to people, communities, and the planet.

"Good nutrition is not a privilege—it is a powerful lever for health, dignity, and opportunity."



 UK | Ireland | Netherlands  France  Italy  Norway



The nutrition targets for Marine Fishes product category

Nutrition Standard	Products with packing media	Products with flavor and seasoning	Products with sauce and curry	Small meal RTE	Spread Topping
Nutrients to Limit	Energy		< 400 kcal/100 g		≤ 200 kcal/100 g
	Saturated fat		≤ 4 g/100 g (other fishes)		
			≤ 6 g/100 g (mackerel)		
	Trans fat	Not applicable		≤ 0.2 g/100 g	
	Sodium	≤ 400 mg/100 g		≤ 480 mg/100 g	
Nutrients to Promote*	Added sugars*	0 g/100 g		≤ 5 g/100 g	
	Protein		Able to claim on pack e.g., high in..., source of..., as content claim		
	Omega 3	For EU: e.g., high in..., or source of...; For USA: "contains...g of omega-3 fatty acids per serving" or "provides...g of omega-3 fatty acids" and Thailand: required the levels of DHA+EPA ≥ 40 mg/100g has context menu	Able to claim on pack		

*Added sugars mean all mono- and disaccharides with a caloric value of > 3.5 kcal/g derived from sources other than fresh fruits, vegetables and dairy products that are added during the processing of foods (such as sucrose or dextrose) and foods packaged as sweeteners (such as table sugar). Sugars from products that (mainly) contain natural sugars, such as honey, syrups, and (more than twice) concentrated fruit drinks, are considered added sugars. For example, when glucose-fructose syrups are added to a fruit product, the sugars from the syrup will be counted as added sugars (Choice International Foundation, 2019). This description aligned with the WHO's definition of 'Free sugar.'

**Target nutrients to enrich fortified foods—focusing on ingredients that enhance nutritional quality and contribute to better health.

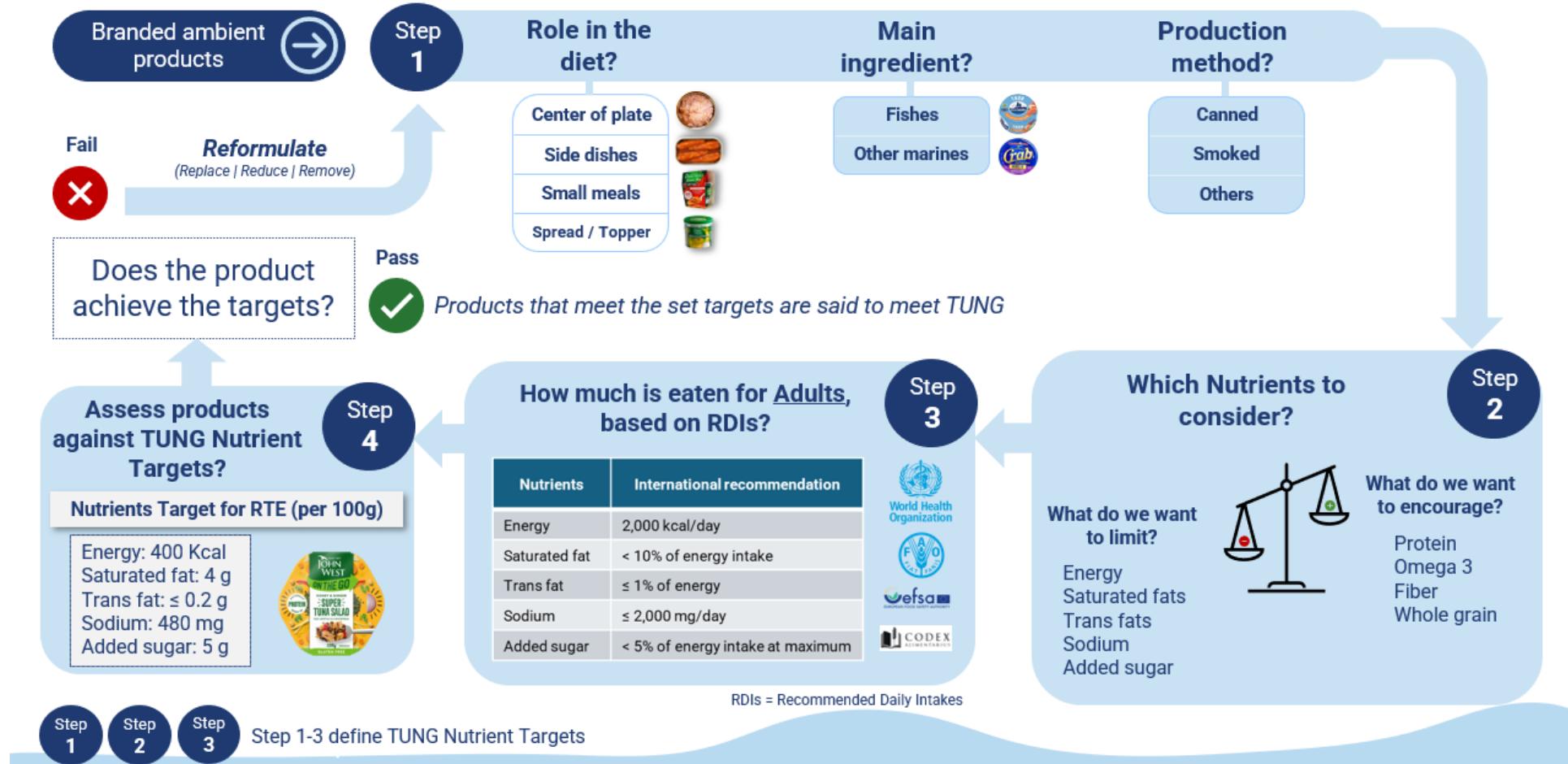
The nutrition targets for **Other Marine Species** product category

Nutrition Standard	Products with packing media
Nutrients to Limit	Energy < 400 kcal/100 g
	Saturated fat ≤ 4 g/100 g
	Trans fat Not applicable
	Sodium ≤ 480 mg/100 g
	Added sugars* 0 g/100g

*Added sugars mean all mono- and disaccharides with a caloric value of > 3.5 kcal/g derived from sources other than fresh fruits, vegetables and dairy products that are added during the processing of foods (such as sucrose or dextrose) and foods packaged as sweeteners (such as table sugar). Sugars from products that (mainly) contain natural sugars, such as honey, syrups, and (more than twice) concentrated fruit drinks, are considered added sugars. For example, when glucose-fructose syrups are added to a fruit product, the sugars from the syrup will be counted as added sugars.

Thai Union Nutrition Guidelines (TUNG) is a journey to make our Products More Nutritious

Thai Union Nutritional Profiling System



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