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Policy Brief

Nine in Ten Packaged Foods in Indonesia Are High in Sugar, Salt, or Fat:

Evidence from Nutrient Profile Models

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Nine in Ten Packaged Foods in Indonesia Are High in Sugar, Salt, or Fat: Evidence from Nutrient Profile Models

Key Findings

- **Most packaged foods in Indonesia require regulation:** Across the 8,077 packaged food products (including food and beverages) collected from eight supermarkets and convenience stores in four major Indonesian cities, approximately **nine out of ten were classified as excessive in sugar, salt, and/or fat, and/or as containing non-sugar sweeteners** by evidence-based nutrient profile models (NPMs), including WHO SEARO, WHO PAHO, and a best-practice model that integrates key features of established NPMs and draws on lessons from Latin American countries.

- **International evidence-based nutrient profile models provide clearer prioritisation for policy action for Indonesia:** Comparison of the WHO SEARO NPM, WHO PAHO NPM, and the best-practice NPM with Indonesian BPOM's proposed Nutri-level thresholds suggests that evidence-based NPM perform better in the Indonesian context. The SEARO, PAHO, and best-practice models more consistently identify products high in sugar, salt, and fat, and do so to a greater extent than the Nutri-level thresholds. Among the models assessed, the best-practice model performs most strongly in supporting the policy objective of reducing population consumption of products high in these nutrients. It enhances the identification of unhealthy products and provides a more robust foundation for effective food policies.

- **Indonesia's proposed Nutri-Level thresholds—which classify products into graded categories (A–D) based on specified nutrient thresholds to guide regulatory action, particularly for front-of-package labeling—raising concerns about regulatory clarity and alignment with policy objectives:** While Nutri-Level thresholds aim to identify products subject to regulatory measures, the differentiation between Categories C and D appears unnecessary and may weaken the policy's effectiveness in distinguishing levels of unhealthiness. Category C's thresholds and corresponding yellow colored front-of-pack labeling (FOPL) design may create the impression that these products are acceptable or relatively healthier, despite many of them exceeding sugar, salt or fat thresholds under evidence based NPMs. This misperception could weaken policy's effectiveness in supporting Indonesia's objective of reducing population consumption of sugar, salt, and fat.

https://www.who.int/publications/i/item/9789241549028

Background

As in many countries globally, the consumption of packaged foods in Indonesia has increased rapidly, raising concerns about population exposure to foods high in sugar, salt, and fat—key risk factors for diet-related non-communicable diseases [1–3]. In response, policymakers are exploring regulatory approaches, including marketing restrictions, front-of-pack labelling, and fiscal measures such as excise taxes, to improve the food environment. However, evidence on the nutritional quality of packaged foods available across Indonesia remains limited and fragmented, constraining the formulation of effective and evidence-based food policies.

Nutrient Profile Models (NPMs) are evidence-based tools used to classify foods and beverages according to their nutritional composition, by assessing the levels of nutrients of concern such as sugar, salt, fat, and non-sugar sweeteners against established thresholds [4]. NPMs also define the scope of products covered, including which foods and beverages are included or excluded prior to applying these thresholds [5]. NPMs help determine whether a product is considered "unhealthy" when consumed in excess and should be limited in standard diets [5–6]. The NPMs are widely used to support regulatory measures including front-of-pack nutrition labelling, restrictions on marketing, and fiscal policies. Various models, such as those developed by the World Health Organization, provide structured frameworks that countries, including Indonesia, can adapt to their national contexts.

This policy brief draws on a 2026 study conducted by the Center of Indonesia's Strategic Development Initiatives (CISDI) in collaboration with the Center for Health and Nutrition Education, Counseling, and Empowerment (CHeNECE), Universitas Airlangga. The analysis includes systematically collecting nutrition information of over 8,000 packaged food products across four major cities (Jakarta, Surabaya, Medan, and Makassar) and assessing their nutritional quality using evidence based NPMs and government proposed nutri-level thresholds to generate policy-relevant evidence for food regulation, consumer protection efforts, and public health improvements in Indonesia.

Approach

Packaged foods were sampled from eight supermarkets and convenience stores across Jakarta, Surabaya, Medan, and Makassar to capture a broad representation of packaged foods available in Indonesia. In this context, "packaged foods" refers to all packaged food and beverages. Nutrition information from Nutrition Facts Tables/NFTs (*Informasi Nilai Gizi,* ING) was systematically collected using the Food Label Information Program (FLIP) and its standardized protocol developed by the University of Toronto [7]. The nutrient data of products were first cleaned to ensure consistency and accuracy. For products requiring preparation, nutrient values were entered and assessed as reconstituted according to the preparation instructions provided on the packaging.

Nutrients and ingredients of concern—particularly sugar, salt, and fat, as well as the presence of non-sugar sweeteners—were assessed against the criteria of internationally recognised nutrient profile models, including the World Health Organization (WHO) South-East Asia Regional Office (SEARO) model [8], the WHO Pan American Health Organization (PAHO) model [9], and "the best practice model" benchmarked against frameworks from WHO SEARO, WHO PAHO, and WHO Regional Office for Africa (AFRO) as well as lessons from Latin American countries such as Mexico and Chile [4]. Each product was subsequently classified as meeting or exceeding nutrient thresholds that would trigger regulatory measures under each model. In addition, in light of Indonesia's planned implementation of Nutri-Level front-of-pack labelling with corresponding thresholds by the Food and Drug Authority (Badan Pengawas Obat dan Makanan, BPOM), packaged food products were also evaluated against the proposed Nutri-Level thresholds dated 9 September 2024. Results were summarised by calculating the proportion of products flagged as high in sugar, salt, and fat (including total fat, saturated fat, and trans fat) and/or containing non-sugar sweeteners under SEARO, PAHO, the best practice model and Nutri-Level category D (the products that are perceived unhealthiest), allowing direct comparison across models.

Results

Nutri-Level Thresholds Fall Short Compared to International evidence-based NPMs in Identifying Unhealthy Foods

The results from the comparison of WHO SEARO model, PAHO model, and best practice model with Indonesia's Nutri-level threshold application across sampled packaged foods is shown in Table 1. The three evidence-based NPMs indicate that approximately nine-out-of-ten packaged foods in Indonesia would be subject to food policy measures. The WHO SEARO model identifies 90.1% and the PAHO model identifies 90.7% of packaged foods that would trigger regulatory measures for at least one nutrient of concern. The best practice model identified an even higher proportion (94.6%), indicating stronger performance. Meanwhile, Indonesia's proposed Nutri-Level thresholds only classified 72.9% of products into the "D" category for at least one nutrient of concern. These results indicate that the evidence-based NPMs are more effective in flagging the packaged foods that are unhealthy compared to Indonesia's Nutri-Level thresholds.

A similar pattern emerges when the analysis is restricted to ready-to-consume sugar-sweetened beverages (SSBs), the product category prioritised by BPOM for the initial implementation of front of pack labeling on packaged foods. For this product group, Nutri-Level classified the lowest proportion of products as subject to regulatory measures (43.6%) compared with both SEARO (94.2%), PAHO (92.0%), and the best practice model (97.4%). This stark difference shows how thresholds are defined and

applied across models, particularly Nutri-Level's sugar thresholds which trigger the least percentage of ready to consume SSBs that will be the first to require regulatory measures (for the percentage of products classified as excess in each nutrient of concerns under each model, please refer to Supplementary Materials). Nutri-Level assesses total sugars, but excludes lactose in dairy products, whereas WHO SEARO model evaluates total sugars without such exclusion. In contrast, PAHO and the best practice models consider free sugars[1] using an energy-density approach. While these indicators capture different components of sugar content, the thresholds used for Nutri-Level Level D are comparatively higher than those in the other models and are therefore less effective in flagging beverages that are high in sugar.

Table 1.

Proportion of All Packaged Foods and Ready-to-Consume Sugar-Sweetened Beverages Subject to food policy regulations by Nutrient Profile Models and Nutri-level thresholds

Nutrient profile model/thresholds	All packaged foods and beverages (% flagged out of total package food products) N: 8,077	Ready-to-consume Sugar-sweetened beverages (% flagged out of total sugar-sweetened beverages) N: 1,626	Basis for regulatory measures
WHO SEARO NPM	90.1%	94.2%	Applied to packaged food and beverage products within the 18 WHO SEARO-defined categories that exceed category-specific thresholds for sugar, sodium, or fat, and/or contain non-sugar sweeteners.
WHO PAHO NPM	90.7%	92.0%	Applied to processed and ultra-processed foods that are high in free sugar, sodium, saturated fat, total fat, and/or trans-fat,, and/or contain non-sugar sweeteners and other sweeteners.

[1] Free sugars, as defined by WHO, include sugars added during processing as well as sugars naturally present in honey, syrups, fruit juices, and fruit juice concentrates, distinguishing them from added sugars, which refer only to sugars added during processing

Best practice NPM	94.5%	97.4%	Applied to processed and ultra-processed foods that are high in free sugar, sodium, saturated fat, total fat, and/or trans-fat, and/or contain non-sugar sweeteners and other sweeteners.
Nutri-level (BPOM) - D	72.8%	42.7%	Intended to apply to packaged foods and beverages(excluding fresh and fresh-frozen packaged foods), with initial prioritisation for ready-to-consume SSBs; classified as Categories C or D for mandatory regulation.

Notes:
- Ready-to-consume SSBs include ready-to-drink beverages (e.g., from cans or cartons), as well as concentrated and powdered forms.

Taken together, these findings suggest that current proposed Nutri-Level thresholds raise questions about its effectiveness in capturing the full extent of unhealthy packaged foods when compared with internationally recognised nutrient profile models. At the same time, the results highlight that the best practice NPM represents the most robust and appropriate option for adoption, given its stronger ability to identify products high in nutrients of concern.

Nutri-Level thresholds classification may reduce regulatory and consumer clarity

Beyond differences in the overall proportion of products flagged for regulations, the distribution of products across Nutri-Level categories has important implications for regulatory clarity. Under Nutri-Level thresholds, a substantial share of packaged foods are classified into Category C, which—together with Category D—are subject to mandatory regulatory measures. While category D captures the products that may be perceived to be the unhealthiest, Category C captures a wide range of products with elevated nutrient of concern levels according to other NPMs.

When the products are categorized according to the Nutri-level categories and examined, the distribution of products across categories shows that a large portion of products fall into Category C (Figure 1). This pattern is observed both across packaged foods and ready to consume sugar-sweetened beverages, though it is more marked in the latter. When it comes to ready-to-consume sugar-sweetened beverages, a small proportion of products, particularly those marketed with a “zero-sugar” claim and using non-sugar sweeteners, would fall into either the C or D categories, however it is unclear which category these products will fall under since there is no clear distinction determining whether they should be classified as C or D. This highlights an example of ambiguity and limitations of the Nutri-Level thresholds.

Figure 1.

Distribution of packaged foods across Nutri-Level categories

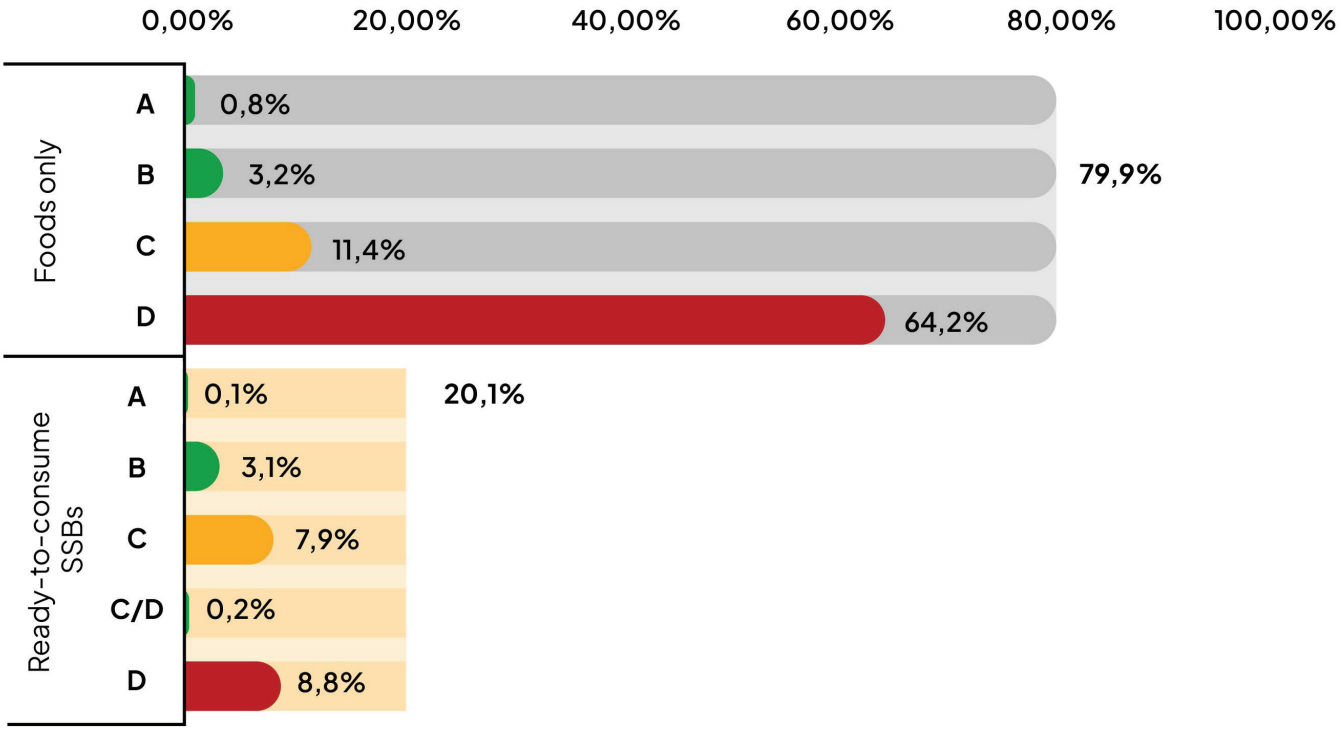
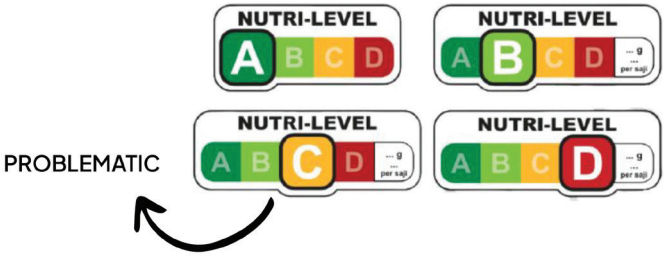


Figure 2.

BPOM Nutri-level FOPL Design

In contrast, the evidence-based NPMs assessed rely on clearer binary thresholds (either above or below the threshold per nutrient, often separated by liquids and solids) that directly indicate whether products exceed nutrient limits relevant for regulatory measures. When the nutri-level thresholds are used as the basis for FOPL design as proposed by BPOM (Figure 2.), the category C products labelled in yellow may also trickle down to impact consumers, creating confusion, as a large share of products may be labelled suboptimally without clearly distinguishing all of the least healthy options. These findings highlight the importance of reassessing the Nutri-Level thresholds altogether and considering the adoption of an evidence-based NPM, particularly the best practice model.



Source: BPOM's nutri-level regulation draft dated 9 September 2024

Policy Recommendations

Strengthen national food policy measures by adoption of the best practice NPM

The proposed Indonesian Nutri-Level thresholds are comparatively less stringent than internationally recognized nutrient profiling models such as WHO SEARO, WHO PAHO and the best practice model, resulting in weaker identification of products high in nutrients of concern. Adopting the best practice nutrient profile model would therefore strengthen the foundation of national food policy measures.

Strengthen governance to safeguard policymaking

Governments should establish transparent, inclusive, and evidence-based processes for developing and implementing food policy measures. Safeguards should be in place to prevent conflicts of interest and undue influence from food industry actors [10]. In addition, meaningful participation of public health experts, civil society, and independent researchers should be prioritized throughout the policymaking process

Implement a warning front-of-pack labelling

Implementing a mandatory, simple interpretive warning front-of-pack label for foods high in sugar, salt, and fat based on the best practice NPM would strengthen consumer protection by improving transparency at the point of purchase and reinforcing the objectives of marketing restrictions.

Expansion of front-of-pack labeling to other packaged foods is essential.

Given the high proportion of packaged foods exceeding NPM thresholds, phased implementation of food regulatory measures such as front-of-pack labeling, to ready to consume sugar-sweetened beverages would substantially reduce their public health impact. Applying such regulatory measures to all packaged foods as soon as possible would ensure broader and more effective population health protection.

Implement comprehensive policies to protect public health

Improving population diets requires a coordinated set of measures based on robust nutrient profiling, including interpretive front-of-pack warning labelling, marketing restrictions, and excise taxes on products high in sugar, salt, and fat that work together to shift consumer choices toward healthier options.

References

1. World Health Organization. Healthy diet. Geneva: World Health Organization; 2020. Available from: https://www.who.int/news-room/fact-sheets/detail/healthy-diet

2. GBD 2021 Risk Factors Collaborators. Global burden of 87 risk factors in 204 countries and territories, 1990–2021: a systematic analysis for the Global Burden of Disease Study 2021. Lancet. 2024;403:2162–2203. doi:10.1016/S0140-6736(24)00933-4

3. Kementerian Kesehatan Republik Indonesia. Survei Kesehatan Indonesia (SKI) 2023. Jakarta: Kementerian Kesehatan RI; 2023. Available from: https://www.badankebijakan.kemkes.go.id/laporan-tematik-ski/

4. Global Health Advocacy Incubator. Nutrient profile models: a valuable tool for developing healthy food policies. Washington (DC): Global Health Advocacy Incubator; 2024. Available from: https://www.advocacyincubator.org/program-areas/food-and-nutrition-2/nutrient-profile-models-position-paper

5. World Health Organization, Regional Office for Europe. WHO nutrient profile model. Copenhagen: WHO Regional Office for Europe; 2015. Available from: https://www.who.int/europe/publications/i/item/9789289051330

6. Rayner M. Nutrient profiling for regulatory purposes. Proc Nutr Soc. 2017;76(3):230–236. doi:10.1017/S0029665117000072

7. University of Toronto. Food Label Information & Price (FLIP). Toronto: University of Toronto; [cited 2026 Mar 30]. Available from: https://labbelab.utoronto.ca/projects/food-label-information-price-flip/

8. World Health Organization, Regional Office for South-East Asia. WHO nutrient profile model for South-East Asia Region. New Delhi: WHO Regional Office for South-East Asia; 2017. Available from: https://www.who.int/publications/i/item/9789290225447

9. Pan American Health Organization. Pan American Health Organization nutrient profile model. Washington (DC): Pan American Health Organization; 2016. Available from: https://iris.paho.org/handle/10665.2/18621

10. Center for Indonesia's Strategic Development Initiatives. Policy brief: The urgency of implementing evidence-based and conflict-free front-of-pack labeling (FOPL). Jakarta: CISDI; 2025. Available from: https://cisdi.org/riset-dan-publikasi/publikasi/dokumen/policy-brief-fopl-cisdi

11. World Health Organization, Food and Agriculture Organization of the United Nations. Diet, nutrition and the prevention of chronic diseases: report of a joint WHO/FAO expert consultation. Geneva: World Health Organization; 2003. Available from: https://iris.who.int/handle/10665/42665

12. Sharma A, et al. The WHO South-East Asia Region Nutrient Profile Model is quite appropriate for India: an exploration of 31,516 food products. Nutrients. 2021;13(8):2780.

13. Frank T, Ng SW, Miles DR, Swart EC. Applying and comparing various nutrient profiling models against the packaged food supply in South Africa. Public Health Nutr. 2022;25(8):2296–2307.

14. Khandpur N, de Morais Sato P, Mais LA, Bortoletto Martins AP, Spinillo CG, Garcia MT, et al. Comparison of nutrient profile models for packaged foods in Brazil. Nutrients. 2022;14(23):4998.

15. Parra DC, da Costa-Louzada ML, Moubarac JC, Bertazzi-Levy R, Khandpur N, Cediel G, et al. Comparison of different nutrient profiling models to classify foods marketed in Colombia. Public Health Nutr. 2019;22(15):2741–2750.

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