

Background

Food fortification is a proven, cost-effective, and sustainable public health intervention to address micronutrient deficiencies at scale¹. Indonesia has implemented mandatory food fortification policies since the early 1990s, beginning with universal salt iodization in response to the high prevalence of iodine deficiency disorders (IDD)², and subsequently expanding to include wheat flour fortification in 2002³ and vitamin A fortification of palm cooking oil in 2013⁴.

Despite the existence of a regulatory framework and technical standards, the implementation of mandatory food fortification continues to face significant challenges. Surveillance results from the Food and Drug Supervisory Agency (BPOM) in 2024 indicate that a proportion of salt, wheat flour, and palm cooking oil products do not meet fortificant levels in accordance with the Indonesian National Standard (SNI)^{5,6,7}. This non-compliance reduces the effectiveness of fortification as a national strategy to prevent anemia, iodine deficiency disorders (IDD), and vitamin A deficiency.

This gap in industry compliance is driven by several key factors. First, there is no structured national coordination mechanism to align policies, monitoring, and industry development across institutions. Second, fortification governance is inherently multisectoral—engaging the Ministry of Industry, Ministry of Health, National Standardization Agency (BSN), BPOM, National Accreditation Committee (KAN), and subnational governments—yet operational coordination remains limited. Third, monitoring and enforcement mechanisms are not yet optimal, compounded by variability in laboratory capacity and limited technical assistance for industry, particularly small and medium enterprises (SMEs).

These conditions highlight the need to strengthen cross-stakeholder synergy to ensure that mandatory food fortification is implemented effectively, consistently, and sustainably.

Stakeholder Mapping and Coordination to Strengthen Synergy

The implementation of mandatory food fortification involves multiple institutions

with interrelated mandates. Mapping of roles indicates that fortification governance

¹ WHO. (2006). *Guidelines on Food Fortification with Micronutrients*. World Health Organization (WHO) & Food and Agriculture Organization (FAO).

² Badan Penelitian dan Pengembangan Kesehatan. (2004). *Surveilans untuk Mengatasi Masalah Gangguan Akibat Kekurangan Iodium*. Jakarta: Departemen Kesehatan Republik Indonesia.

³ Kementerian Perindustrian dan Perdagangan RI. (2001). *Keputusan Menteri Perindustrian dan Perdagangan Nomor 153/M/SK/10/2001 tentang Pemberlakuan Wajib SNI Tepung Terigu sebagai Bahan Makanan*.

⁴ Kementerian Perindustrian RI. (2013). *Peraturan Menteri Perindustrian Nomor 87/M-IND/PER/4/2014 tentang Pemberlakuan Wajib SNI Minyak Goreng Sawit*.

⁵ BPOM. (2024). *Hasil Pengawasan Garam Beryodium Tahun 2024*. Jakarta: BPOM.

⁶ BPOM. (2024). *Hasil Pengawasan Tepung Terigu Tahun 2024*. Jakarta: BPOM.

⁷ BPOM. (2024). *Hasil Pengawasan Minyak Goreng Sawit Tahun 2024*. Jakarta: BPOM.

follows a relatively consistent structure across the three main commodities—salt, wheat flour, and palm cooking oil. These challenges highlight that the existence of regulations alone is insufficient without strengthened coordination, integrated monitoring systems, and technical support for industry. **Table 1** presents **key elements of an integrated mapping of stakeholder roles and synergies** across major fortified commodities—salt, wheat flour, and palm cooking oil—highlighting linkages in

standard-setting, conformity assessment, industry support, and post-market surveillance. This mapping serves as a foundation to identify critical coordination gaps and inform targeted actions to strengthen cross-sectoral collaboration, with the aim of improving industry compliance with mandatory fortification in a consistent and sustainable manner. Detailed roles and responsibilities of stakeholders by fortified commodity are provided in the annex.

Table 1. Mapping Key Stakeholder Roles and Synergies in Mandatory Food Fortification Programs

Stakeholder	Main Roles Across Commodities	Legal Status (Minister of Industry Regulation Across Commodities)*	Synergy Mechanisms to Strengthen Compliance
Ministry of Industry (Kemenperin)	Mandates the implementation of SNI, designates certification bodies (LSPPro) and testing laboratories, issues SNI certificates (SPPT-SNI), and assigns Industrial Standardization Supervisory Officers (PPSI).	Explicit	Coordinates with the National Standardization Agency (BSN) on standard adoption and revision, and with the National Agency of Drug and Food Control (BPOM) and Ministry of Health to align quality oversight.
National Standardization Agency (BSN)	Develops and updates SNI and aligns national standards with international benchmarks.	Implicit	Harmonizes standards in collaboration with the Ministry of Industry and technical committees on food.
National Accreditation Committee (KAN)	Accredits certification bodies (LSPPro) and testing laboratories to ensure competence in conformity assessment.	Implicit	Collaborates with BSN and the Ministry of Industry to validate institutional competence and ensure the credibility of certification systems.
Product Certification Bodies (LSPPro)	Conduct audits, certification, and surveillance of SNI implementation within industry.	Explicit	Coordinates with testing laboratories and the Ministry of Industry in the issuance of SNI certificates (SPPT-SNI).

Stakeholder	Main Roles Across Commodities	Legal Status (Minister of Industry Regulation Across Commodities)*	Synergy Mechanisms to Strengthen Compliance
Testing Laboratories	Perform testing of fortificant levels and quality parameters.	Explicit	Support certification processes (LSPro) and serve as reference points for BPOM in post-market surveillance.
National Agency of Drug and Food Control (BPOM)	Conducts post-market surveillance on product quality, fortificant levels, and labeling compliance.	Implicit	Engages in cross-agency coordination for post-market control, including through BPOM Regulation No. 14/2019.
Subnational Governments / PPSI	Provide technical assistance and oversee industry compliance with SNI at the local level.	Implicit	Act as the operational extension of the Ministry of Industry, ensuring on-the-ground supervision and direct industry engagement.

*Minister of Industry Regulation No. 16/2025 on iodized salt, Regulation No. 61/2024 on wheat flour fortification, and Regulation No. 3/2025 on vitamin A fortification of palm cooking oil

Overall, the implementation of mandatory food fortification across salt, wheat flour, and palm cooking oil follows a broadly consistent governance model. The regulatory frameworks for each commodity—SNI 3556:2024 and Minister of Industry Regulation No. 16/2025 for salt; Regulation No. 61/2024 for wheat flour; and Regulation No. 3/2025 enforcing SNI 7709:2019 for palm cooking oil—establish a **clear division of roles among regulators, standard-setting bodies, conformity assessment institutions, and enforcement actors**. The Ministry of Industry plays a central role in mandating SNI compliance and overseeing industry development, supported by the National Standardization Agency (BSN) in developing and updating technical standards in line with scientific advances and international benchmarks. Within the conformity assessment system, the National Accreditation Committee (KAN), Product Certification Bodies (LSPro), and testing laboratories perform core technical

functions through accreditation, certification, surveillance, and testing of quality and fortificant parameters as prerequisites for SNI compliance.

At the downstream level, the National Agency of Drug and Food Control (BPOM) and subnational governments—including Industrial Standardization Supervisory Officers (PPSI/PPJSI) as extensions of the Ministry of Industry—play a critical role in post-market surveillance and industry oversight. BPOM is responsible for ensuring product quality, fortificant levels, and labeling compliance in the market, while subnational authorities support SNI implementation through field-level supervision and industry engagement. This governance pattern is consistent across all three commodities, with regulatory oversight focused on key parameters: iodine content in salt, fortificant levels in wheat flour, and vitamin A content in palm cooking oil.

Despite established regulatory frameworks and defined institutional roles, significant implementation challenges persist across commodities. In the salt sector, current standards do not fully cover fortification requirements for industrial salt, while **direct sales by small-scale producers (leakage)** continue. Many salt producers remain uncertified under SNI and instead market products under household-level distribution permits (P-IRT). In addition, **limited access and capacity** among producer groups to undertake fortification constrain compliance, underscoring the need to strengthen the role of iodine deficiency control coordination mechanisms.

In wheat flour fortification, monitoring and evaluation systems require further strengthening, particularly to address practices such as premix dilution (scooping). Enhancing laboratory capacity to test fortificant levels—**including through proficiency testing among accredited laboratories**—is critical. Moreover, **generating stronger evidence on the health impact of fortified wheat flour consumption** can help reinforce industry compliance.

For palm cooking oil, **the continued circulation of more affordable bulk (unbranded) oil**—particularly among lower-income households—poses a challenge to ensuring consistent compliance with vitamin A fortification standards.

These challenges highlight that while regulatory frameworks provide an essential foundation, they are insufficient in isolation. Effective implementation requires robust monitoring and evaluation systems, strengthened cross-sectoral coordination, and enhanced stakeholder synergy.

Integrating oversight mechanisms, improving data sharing, and reinforcing coordinated action across sectors are critical to increasing industry compliance and ensuring that mandatory food fortification is implemented effectively, consistently, and sustainably to improve population nutrition outcomes.

In response to the need for stronger cross-sectoral orchestration, the Minister of National Development Planning/Head of Bappenas issued Decree No. 19/M.PPN/HK/03/2024 establishing the **National Food Fortification Coordination Forum** as a platform to strengthen synergy and ensure effective and sustainable implementation of food fortification. The Forum serves as a **strategic instrument** to align policy direction, oversight, advocacy, research, and public communication within a structured coordination framework, thereby reducing fragmented efforts across ministries, subnational governments, industry actors, and other stakeholders.

The Forum adopts a multi-tiered structure designed to ensure coherence between strategic direction and technical implementation. The Advisory Board provides high-level advocacy, political support, and strategic guidance on policy, regulation, monitoring and evaluation, public communication, research, and standardization of fortification programs, including home fortification and biofortification. The Steering Committee ensures accountability through regular reporting to the Minister of National Development Planning/Head of Bappenas, sets priorities, and coordinates cross-sectoral substance. The Responsible Authority oversees overall implementation.

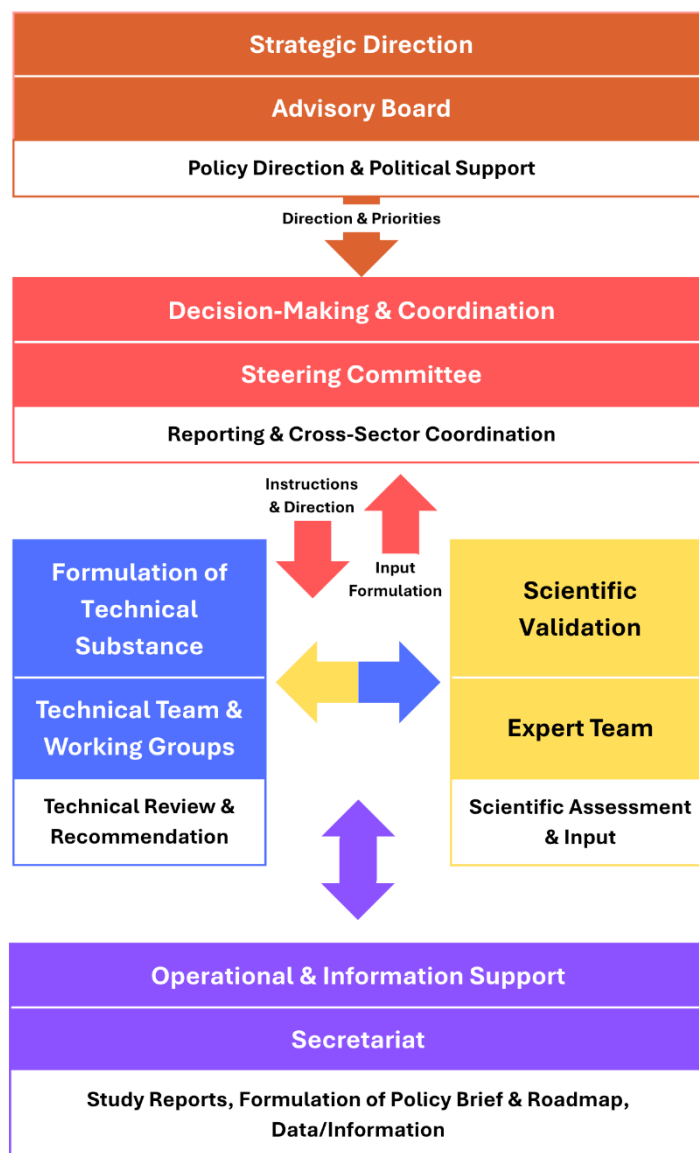


Figure 1. Mapping of Roles of Working Teams within the National Food Fortification Coordination Forum

Technical Teams and Working Groups are tasked with developing commodity-specific analyses, policy recommendations, and monitoring and evaluation frameworks. The Expert Group provides evidence-based inputs and assesses evaluation outcomes, while the Secretariat supports the development of the 2025–2045 roadmap, five-year work plans, monitoring and

evaluation guidelines, public information management, policy briefs, and data and situational analyses.

Through this structured division of roles, the Forum functions as an integrative platform linking strategic direction with strengthened implementation and enhanced compliance in mandatory food fortification.

Recommendations

The regulatory framework for mandatory food fortification, along with the delineation of roles across ministries and agencies, has been established as the foundation for program implementation. To ensure optimal implementation, strengthening cross-stakeholder coordination is essential to enable integrated monitoring and evaluation across the full value chain from upstream to downstream and to inform cross-commodity strategic recommendations. Strengthening industry compliance and the effectiveness of mandatory food fortification requires enhanced cross-stakeholder synergy across four key pillars, namely:

A. Inclusive and Equitable Policy and Regulation Formulation Across Regions

1. Strengthening Cross-Sectoral Coordination Mechanisms

Develop subsidiary regulations or memoranda of understanding among the Ministry of Industry, BPOM, Ministry of Health, and BSN to clarify fortification oversight coordination mechanisms, while reinforcing the role of the National Food Fortification Coordination Forum as a platform for policy synchronization and reporting.

2. Transitional Policy and Oversight for Non-Fortified Products

Establish transition policies for products still circulating without fortification (e.g., bulk palm cooking oil) through simple packaging schemes or fortificant integration at the refinery level to ensure continued access for low-income populations.

3. Equitable and Standardized Laboratory Infrastructure

Expand accredited laboratory networks beyond Java, designated

national reference laboratories, enhance testing laboratory capacity, and implement regular proficiency testing to ensure the quality and comparability of analytical results.

B. Strengthening Industry and Audit Institution Capacity and Transparency

4. Industry Capacity Building, Particularly for MSMEs

Provide technical support and fiscal/non-fiscal incentives for micro, small, and medium enterprises (MSMEs) through fortification training, simplified certification access, subsidized laboratory testing, and provision of fortificants at appropriate scales.

C. Digitalization and Accessibility of Reporting Systems

5. Integration and Digitalization of National Reporting Systems

Develop an integrated digital platform connecting the Ministry of Industry, LSPro, BSN, KAN, BPOM, laboratories, and subnational governments, linking SNI certification data, laboratory testing results, industrial audits, and post-market surveillance to support rapid response and evidence-based policymaking.

D. Evidence-Based Policy Formulation and Evaluation

6. Effectiveness Studies Using Biomarkers

Conduct periodic studies assessing the impact of fortification for each commodity through biomarker measurements (e.g., MUIC, Hb, ferritin, serum retinol/vitamin A, folate) to inform policy evaluation and serve as indirect indicators of industry compliance outcomes.

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Annex

Table 2. Mapping of Roles and Synergies Among Stakeholders in Iodized Salt Fortification Based on Permenperin No. 16/2025

Stakeholder	Main Roles and Responsibilities (as regulated)	Legal Status in Permenperin No. 16/2025	Form of Synergy and Coordination Mechanism
Ministry of Industry (Kemenperin)	Enforces mandatory application of SNI 3556:2016, designates LSPro and testing laboratories, and issues SPPT-SNI.	Explicit (Articles 2–7)	Coordinates with BSN on standard updates and with BPOM and Ministry of Health (Kemenkes) on harmonization of iodine monitoring.
National Standardization Agency (BSN)	Establishes and maintains SNI 3556:2016 on iodized salt for consumption.	Implicit	Collaborates with Kemenperin and the National Food Technical Committee to align national standards with WHO guidelines.
National Accreditation Committee (KAN)	Accredits LSPro and laboratories for iodized salt testing.	Implicit (Article 5(1): LSPro and laboratories must be “accredited by KAN.”)	Technical coordination with BSN and Kemenperin to ensure institutional quality assurance.
Product Certification Bodies (LSPro)	Conduct certification and compliance audits on iodine content in accordance with SNI 3556:2016.	Explicit (Articles 4–5: LSPro are appointed by the Minister and conduct product certification under SNI.)	Coordinate with testing laboratories and Kemenperin within the certification system.
Testing Laboratories	Perform testing of potassium iodate (KIO ₃) content and other quality parameters of iodized salt.	Explicit (Article 5(1)–(2): Testing laboratories are appointed by the Minister and must be accredited by KAN.)	Support LSPro and serve as reference laboratories for BPOM monitoring.
National Agency of Drug and Food Control (BPOM)	Oversees iodine content and quality of iodized salt in the market.	Implicit	Conducts post-market surveillance through inter-agency coordination mechanisms (outside Permenperin) – as stipulated in BPOM Regulation No. 14 of 2019.
Local Governments / PPSI (Provincial and District Salt Industry Centers)	Provide guidance and supervision to iodized salt producers in their jurisdictions.	Implicit	Act as Kemenperin’s regional extension for monitoring SNI implementation.

Table 3. Mapping of Roles and Synergies Among Stakeholders in Wheat Flour Fortification Based on Permenperin No. 61/2024

Stakeholder	Main Roles and Responsibilities (as regulated)	Legal Status in Permenperin No. 61/2024	Form of Synergy and Coordination Mechanism
Ministry of Industry (Kemenperin)	Enforces mandatory implementation of SNI 3751:2018, designates LSPro and testing laboratories, issues SPPT-SNI, and assigns PPSI for industry guidance.	Explicit (Articles 2–7)	Coordinates with BSN in SNI formulation, and with BPOM and the Ministry of Health (Kemenkes) through the National Fortification Forum.
National Standardization Agency (BSN)	Establishes SNI 3751:2018 and harmonizes it with international guidelines (Codex/WHO).	Implicit	Coordinates with Kemenperin and the National Food Technical Committee in updating fortification quality standards.
National Accreditation Committee (KAN)	Accredits LSPro and testing laboratories that assess compliance with SNI.	Implicit (Article 5(1): LSPro and laboratories must be “accredited by KAN.”)	Works jointly with BSN and Kemenperin to ensure the competence of conformity assessment bodies.
Product Certification Bodies (LSPro)	Conduct product certification under SNI Type 5 (audit, testing, and periodic surveillance).	Explicit (Articles 4–5: LSPro are appointed by the Minister and implement product certification under SNI.)	Integrated with SIINas and KAN; coordinates with testing laboratories during the certification process.
Testing Laboratories	Conduct testing of Fe, Zn, vitamin B1, B2, and folic acid content in accordance with SNI 3751:2018.	Explicit (Articles 5(1)–(2): Testing laboratories are appointed by the Minister and must be accredited by KAN.)	Support LSPro certification and auditing processes and serve as reference laboratories for BPOM monitoring.
National Agency of Drug and Food Control (BPOM)	Conducts post-market monitoring of fortificant levels and product labeling compliance.	Implicit	Oversees post-market surveillance through inter-agency coordination mechanisms (outside Permenperin) – as stipulated in BPOM Regulation No. 14 of 2019.
Local Governments / PPSI (Industrial Standardization Supervisory Officers)	Provide guidance and supervision to wheat flour industry actors in their jurisdictions.	Implicit (Article 7(2): “The Minister may assign PPSI officers to conduct guidance and supervision of SNI implementation.”)	Act as Kemenperin’s regional extension for field supervision.

Tabel 4. Mapping of Roles and Synergies Among Stakeholders in Palm Oil Fortification Based on Permenperin No. 3/2025

Stakeholder	Main Roles and Responsibilities (as regulated)	Legal Status in Permenperin No. 3/2025	Form of Synergy and Coordination Mechanism
Ministry of Industry (Kemenperin)	Enforces the mandatory implementation of SNI 7709:2019, designates LSPro and testing laboratories, and issues SPPT-SNI for palm oil industries.	Explicit (Articles 2–7)	Coordinates with BSN on standard implementation, and with BPOM and the Ministry of Health (Kemenkes) on vitamin A quality monitoring.
National Standardization Agency (BSN)	Establishes SNI 7709:2019 and harmonizes the palm oil fortification standard with international guidelines.	Implicit	Coordinates with Kemenperin and the National Food Technical Committee for periodic updates on vitamin A quality standards.
National Accreditation Committee (KAN)	Accredits LSPro and testing laboratories conducting palm oil certification.	Implicit (Article 5(1): LSPro and laboratories must be accredited by KAN.)	Collaborates with BSN and Kemenperin to validate the competence of certification institutions.
Product Certification Bodies (LSPro)	Conduct audits and certify compliance with SNI 7709:2019 using the Type 5 certification system.	Explicit (Articles 4–5: LSPro are appointed by the Minister of Industry.)	Coordinates with Kemenperin and testing laboratories in issuing SPPT-SNI.
Testing Laboratories	Conduct testing of vitamin A (retinyl palmitate) content and other palm oil quality parameters.	Explicit (Article 5(2): testing laboratories must be accredited and appointed by the Minister.)	Serve as reference institutions for testing in support of LSPro and BPOM activities.
National Agency of Drug and Food Control (BPOM)	Conducts post-market surveillance of vitamin A levels in palm oil products available on the market.	Implicit	Oversees post-market control through inter-agency coordination mechanisms (outside the Permenperin) – as stipulated in BPOM Regulation No. 14 of 2019.
Local Governments / PPSI (Industrial Standardization Supervisory Officers)	Conduct industry guidance and monitor the implementation of SNI for palm oil fortification in their regions.	Implicit (Article 7(2): mandates the assignment of PPSI for regional SNI enforcement.)	Directly assigned by Kemenperin to perform field-level supervision and industry mentoring.